3.0 Site-Specific Data Quality Objectives

3.1 Overview

The data quality objectives (DQO) process is followed to establish data requirements. This process ensures that the proper quantity and quality of data are generated to support the investigation objectives at each UST site. This section incorporates the components of the DQO process described in the EPA publication EPA 540-R-93-071, *Data Quality Objectives Process for Superfund* (EPA, 1993). The DQO process as applied to each UST site is described in more detail in Section 4.3 of the WP. Table 3-1 provides a summary of the factors used to determine the appropriate quantity of samples, and the procedures necessary to meet the objectives of the UST Closure Assessments.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Chapter 4.0 in this SFSP and Table 6-1 in the QAP (IT, 1998a). Data will be reported and evaluated in accordance with Corps of Engineers South Atlantic Savannah (CESAS) Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported via hard copy data packages by the laboratory using Contract Laboratory Program (CLP)-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

3.2 Data Users and Available Data

The intended data users and available data related to the UST Closure Assessments at each UST site are presented in Table 3-1. The data users for the data and information generated during field activities are primarily EPA, USACE, ADEM, FTMC, and the USACE supporting contractors. This SFSP, along with the necessary companion documents, has been designed to provide the regulatory agencies with sufficient detail to reach a determination as to the adequacy of the scope of work. The program has also been designed to provide the level of defensible data and information required to confirm or rule out the existence of residual chemical contamination in site media, and if necessary, determine the nature and extent of potential contaminants of concern (PCOC).

3.3 Data Types and Quality

Subsurface soil and groundwater will be sampled and analyzed to meet the objectives of the UST Closure Assessments for the twenty-nine UST sites. Quality assurance/quality control (QA/QC)

Table 3-1

Summary of Data Quality Objectives
Underground Storage Tank (UST) Closure Assessments
Fort McClellan, Calhoun County, Alabama

Potential Data Users	Available Data	Media of Concern	Data Uses and Objectives	Data Types	Analytical Level	Data Quantity
EPA, ADEM USACE, DOD, FTMC, IT Corporation, Department of Justice, Other contractors, and possible future land users	UST Summary Report	Subsurface Soil Groundwater	Investigation to determine current environmental conditions at each UST site.	Subsurface Soil BTEX, PAHs, and lead.	Definitive data in CESAS Level B data packages	86 subsurface soil samples + QC
			Definitive quality data for future decision-making	Groundwater BTEX, PAHs, and lead	Definitive data in CESAS Level B data packages	56 groundwater samples + QC

ADEM - Alabama Department of Environmental Management.
CESAS - Corps of Engineers South Atlantic Savannah.
DOD - U.S. Department of Defense.
EPA - U.S. Environmental Protection Agency.
FTMC - Fort McClellan.
QC - Quality control.
BTEX - Benzene, toluene, ethyl benzene, and xylene.
PAH - Polynuclear aromatic hydrocarbon.
USACE - U.S. Army Corps of Engineers.

samples will be collected for all sample types as described in Chapter 4.0 of this SFSP. Samples will be analyzed by EPA-approved SW-846 methods, where available; comply with EPA definitive data requirements; and be reported using hard copy data packages. In meeting the quality needs of this environmental investigation, the data analyzed at this level of quality are appropriate for site characterization.

3.4. Precision, Accuracy, and Completeness

Laboratory requirements of precision, accuracy, and completeness for this baseline environmental investigation are provided in Chapter 9.0 of the QAP (IT, 1998a).

4.0 Field Activities

4.1 UXO Survey Requirements and Utility Clearances

4.1.1 Surface UXO Survey

An UXO surface sweep will be conducted over areas that will be included in the sampling activities to identify UXO on or near the surface that may present a hazard to on-site workers during field activities. Low-sensitivity magnetometers will be used to locate surface and shallow-buried metal objects. UXO located on the surface will be identified and conspicuously marked for easy avoidance. Subsurface metallic anomalies will not be disturbed, and will also be marked for easy avoidance. UXO personnel requirements, procedures, and detailed descriptions of the geophysical equipment to be used are provided in Chapter 4.0 and Appendices E and F of the approved SAP (IT, 1998a)

Prior to performing any intrusive sampling, a utility clearance will be performed at all locations where subsurface soil and groundwater samples will be collected, using the procedure outlined in Section 4.2.6 of the SAP (IT, 1998a). At UXO sites, the utility clearance will be conducted after the UXO surface survey has cleared the area to be sampled and prior to performing any intrusive sampling. The site manager will mark the proposed locations with stakes, coordinate with the installation to clear the proposed locations for utilities, and obtain digging permits. Once the locations are cleared, the stakes will be labeled as cleared.

4.1.2 Downhole UXO Survey

During the soil boring and downhole sampling, a downhole UXO survey will be performed to determine if buried metallic objects are present. UXO monitoring, as described in Chapter 4.0 of the SAP (IT, 1998a), will continue until undisturbed soils are encountered or the borehole has been advanced to 12 feet below ground surface, whichever is reached first.

4.2 Environmental Sampling

The environmental sampling program during the UST Closure Assessments at the 29 UST sites includes the collection of 86 subsurface soil samples and 56 groundwater samples for chemical analyses. Potential contaminants of concern (PCOC) for the USTs are BTEX, PAHs, and Lead. These samples will be collected and analyzed to provide data to determine whether or not PCOC are present on the sites in concentrations high enough to warrant further action. The sampling

and analytical strategy was approved by Fort McClellan and regulatory personnel from EPA Region IV and ADEM during the BCT meeting on March 18 and 19, 1999.

4.2.1 Subsurface Soil Sampling

Subsurface soil samples will be collected from 86 soil borings installed at 29 UST sites.

4.2.1.1 Sample Locations and Rationale

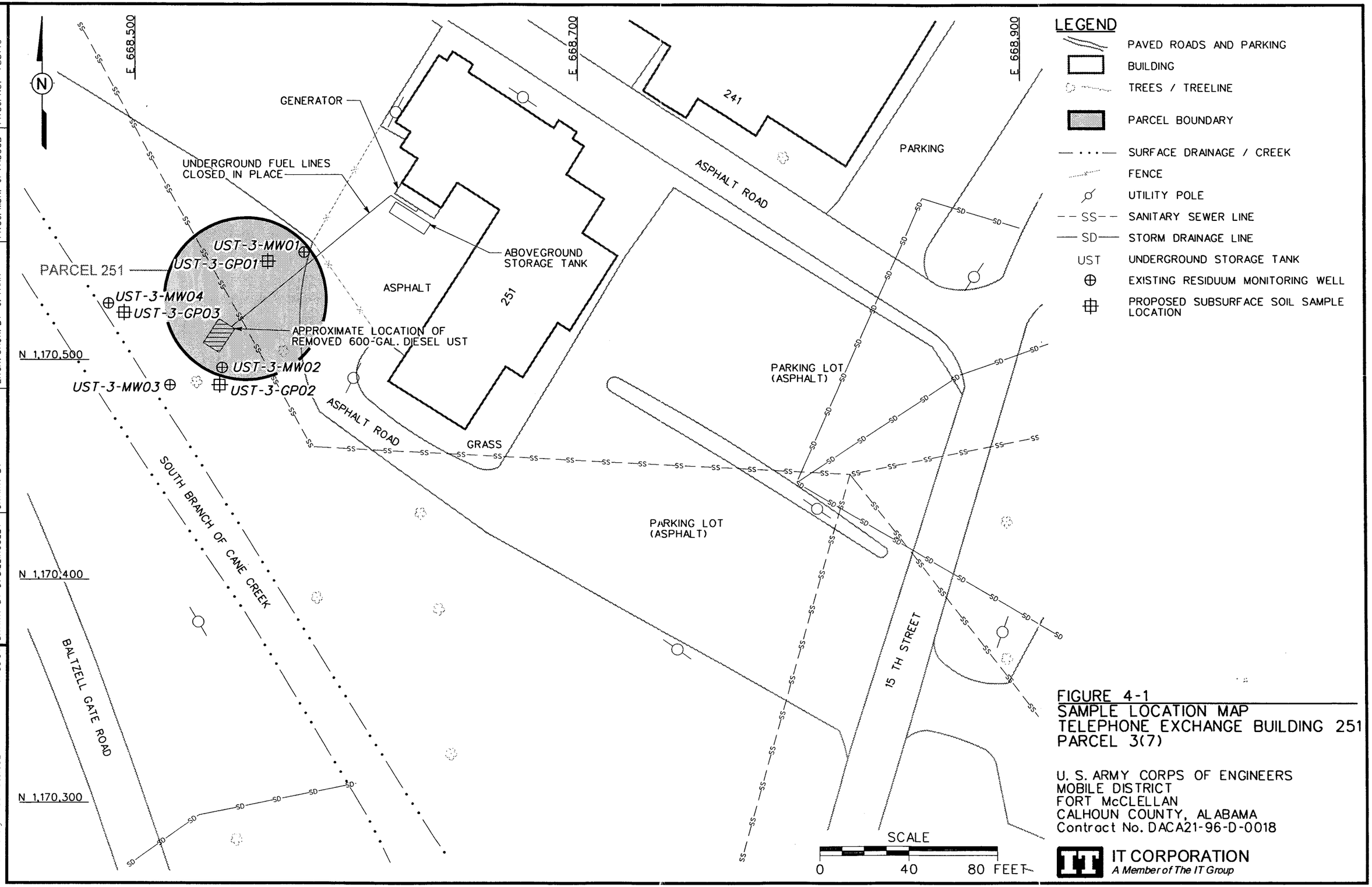
Subsurface soil samples will be collected from the soil borings proposed on Figures 4-1 through Figure 4-29. The subsurface soil sampling rationale is presented in Table 4-1. Subsurface soil sample designations, depths, and required QA/QC sample quantities are listed in Table 4-2. There will be 86 subsurface soil samples collected from 29 UST sites. For soil samples, at each of the sampling locations, direct-push sampling equipment will be advanced to the designated total depth, ranging from ground surface to the bottom of the UST. Subsurface soil samples will be collected from the depth interval that approximates the depth of the bottom of the UST within each borehole. However, site conditions such as lithology and water-bearing strata may impact the actual collection interval. The exact soil boring sampling locations will be determined in the field by the on-site geologist, based on utility and UXO clearances and actual field observations.

4.2.1.2 Sample Collection

Subsurface soil samples will be collected from soil borings at a depth greater than 1 foot bls in the unsaturated zone. The soil borings will be advanced and soil samples collected using the direct-push sampling procedures specified in Section 4.7.1.1 of the SAP (IT, 1998a).

Sample documentation and COC will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1 of the QAP (IT, 1998a). The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

Soil samples will be collected continuously to the approximate depth of the bottom of the UST. The collected subsurface soil samples will be field screened using a PID in accordance with Section 4.15 of the SAP to measure samples exhibiting elevated readings above background (ambient air). Should the approximate depth of the bottom of the UST be unknown, the samples will be collected at the depth interval showing the highest PID reading (above background). If none of the samples collected indicate elevated PID readings above background (ambient air readings) using the PID, the deepest interval collected will be submitted to the laboratory for analysis. One subsurface soil sample from each borehole will be selected for analyses. A



LEGEND

- PAVED ROADS AND PARKING
- BUILDING
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- FENCE
- UTILITY POLE
- SS — SANITARY SEWER LINE
- SD — STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- EXISTING RESIDUUM MONITORING WELL
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-1
SAMPLE LOCATION MAP
TELEPHONE EXCHANGE BUILDING 251
PARCEL 3(7)

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CALHOUN COUNTY, ALABAMA
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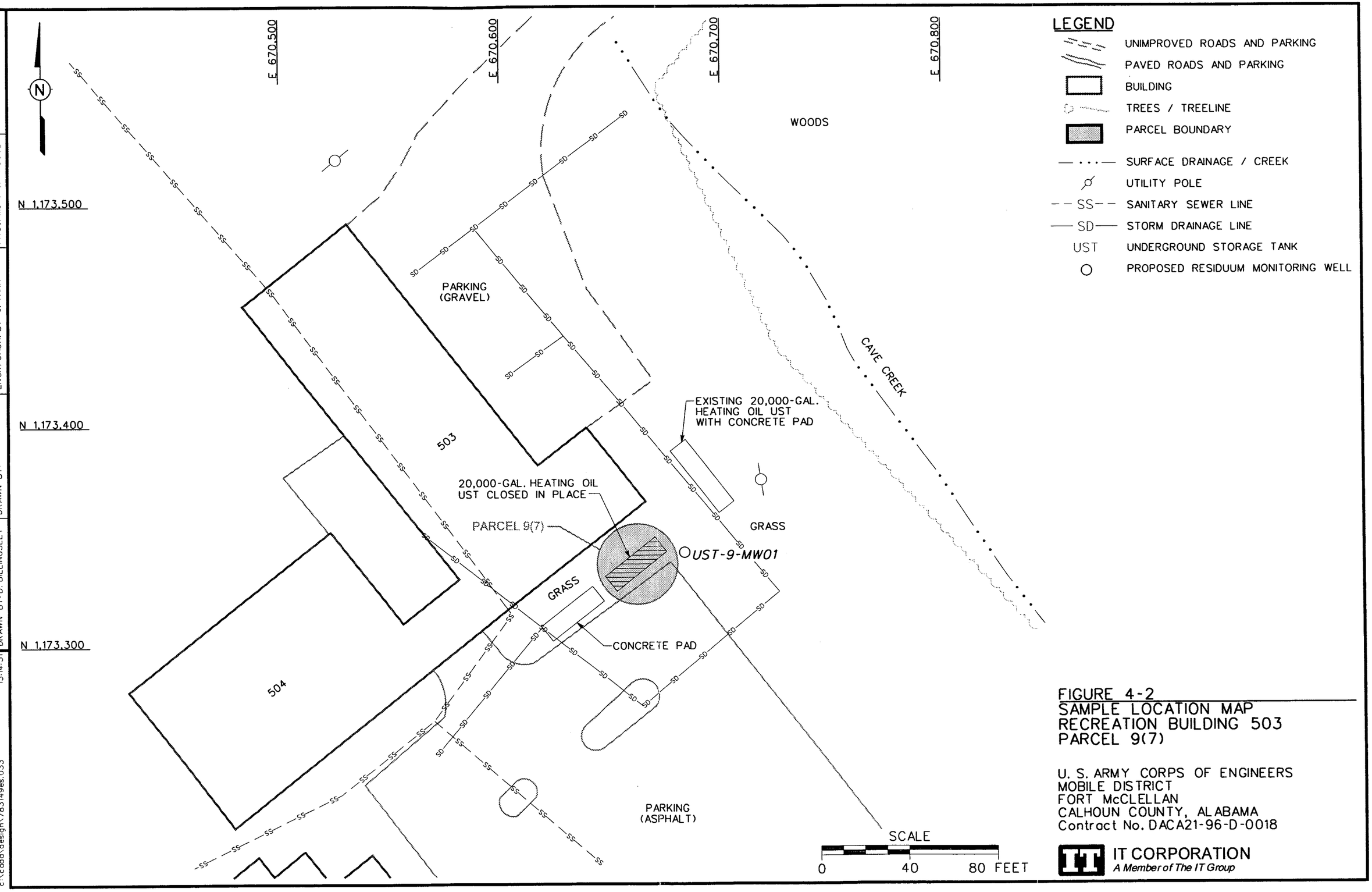

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FIGURE 4-2
SAMPLE LOCATION MAP
RECREATION BUILDING 503
PARCEL 9(7)

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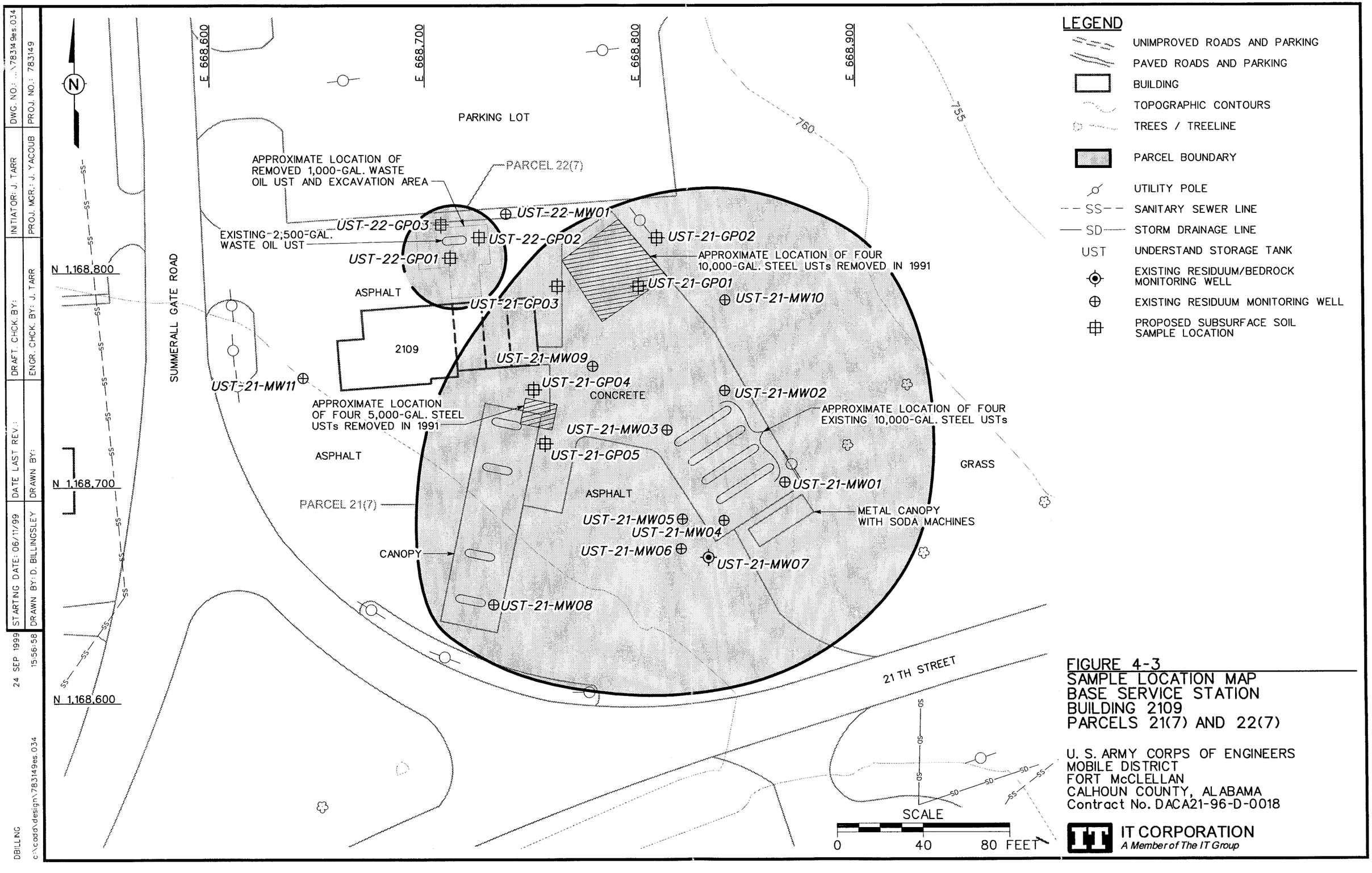

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- SS — SANITARY SEWER LINE
- SD — STORM DRAINAGE LINE
- UST — UNDERSTAND STORAGE TANK
- EXISTING RESIDUUM/BEDROCK MONITORING WELL
- EXISTING RESIDUUM MONITORING WELL
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-3
SAMPLE LOCATION MAP
BASE SERVICE STATION
BUILDING 2109
PARCELS 21(7) AND 22(7)

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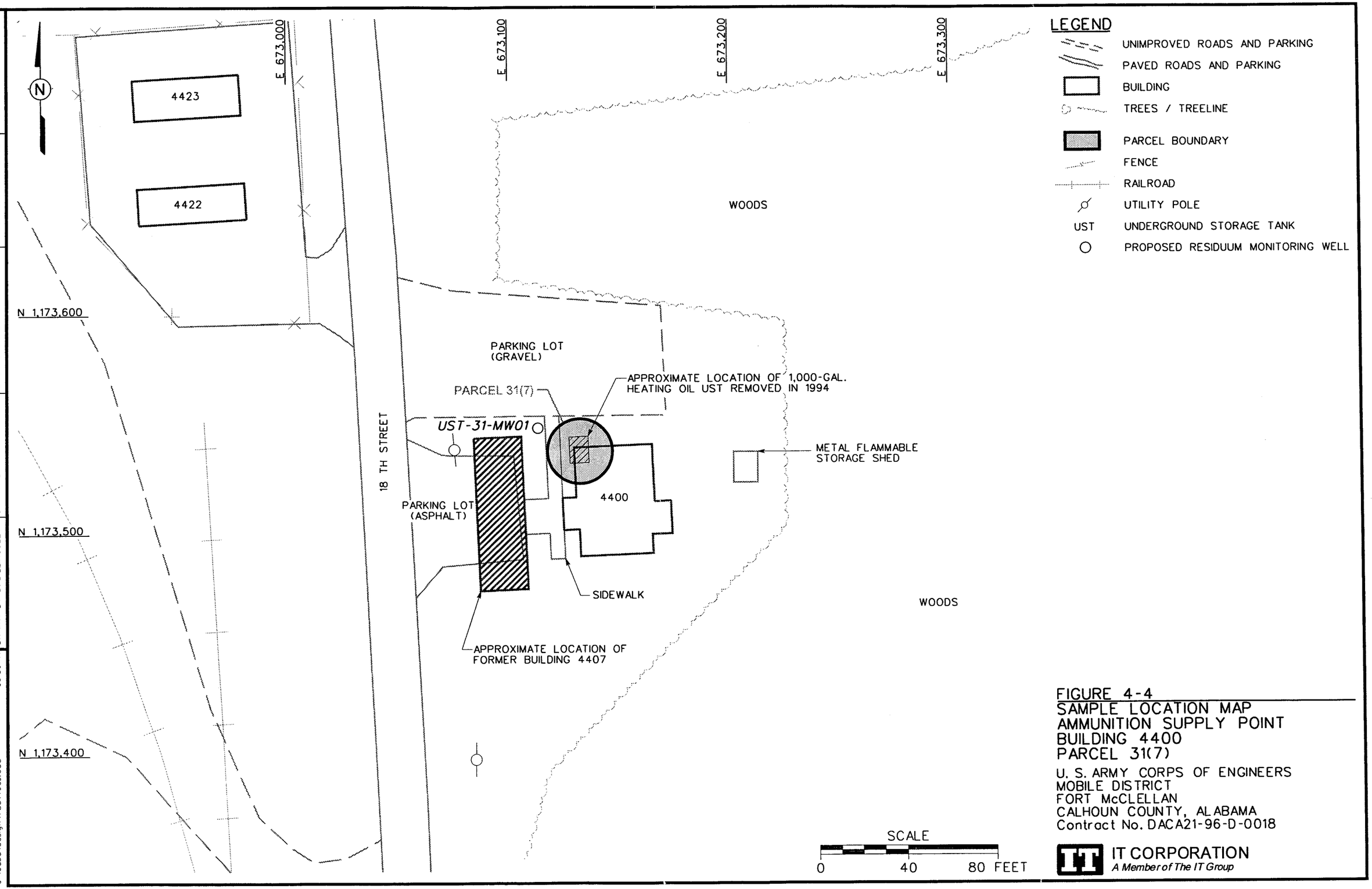

FIGURE 4-4
SAMPLE LOCATION MAP
AMMUNITION SUPPLY POINT
BUILDING 4400
PARCEL 31(7)

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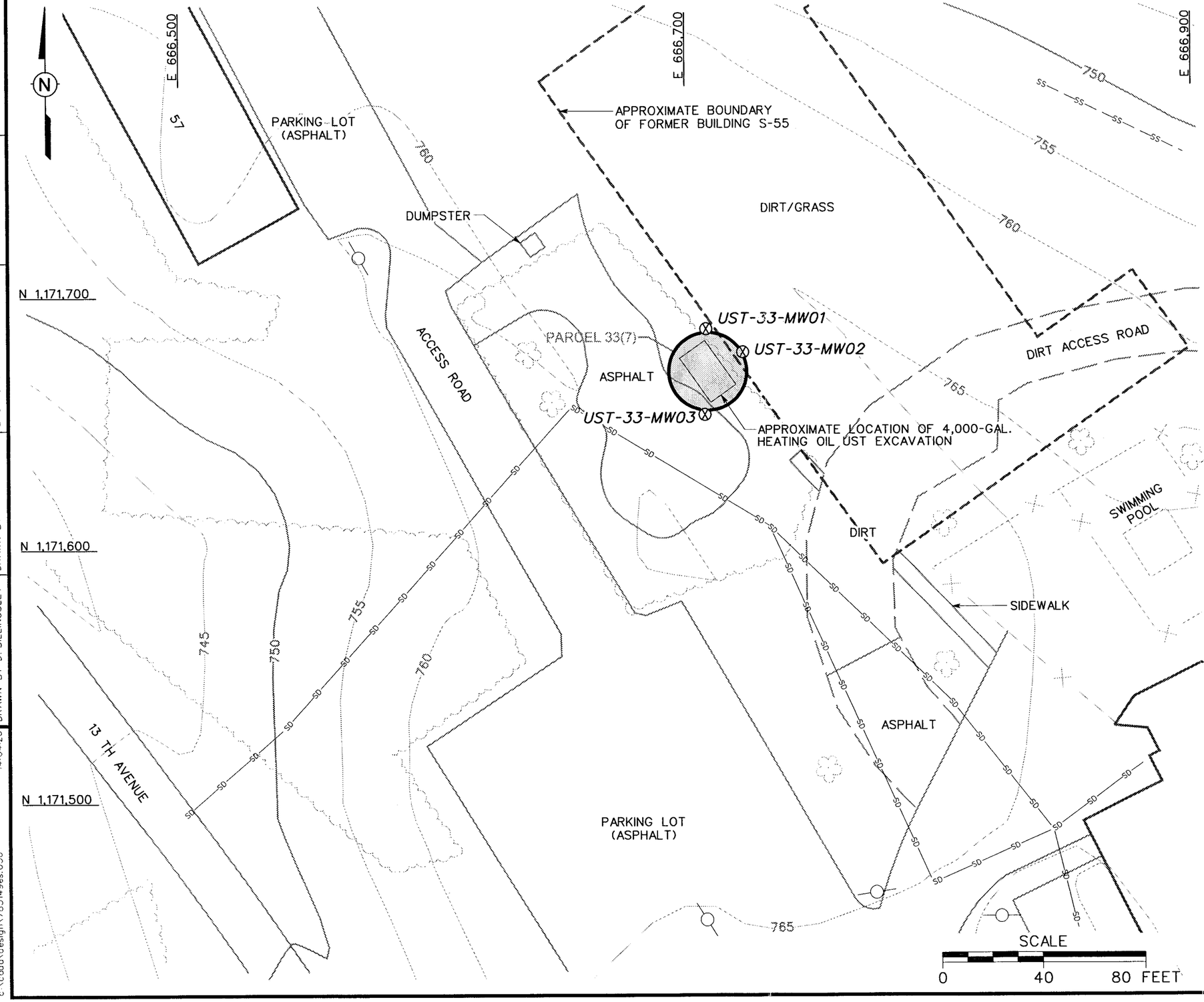

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- FENCE
- UTILITY POLE
- SS — SANITARY SEWER LINE
- SD — STORM DRAINAGE LINE
- UST — GROUNDWATER STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-5
SAMPLE LOCATION MAP
FORMER BUILDING S-55
PARCEL 33(7)

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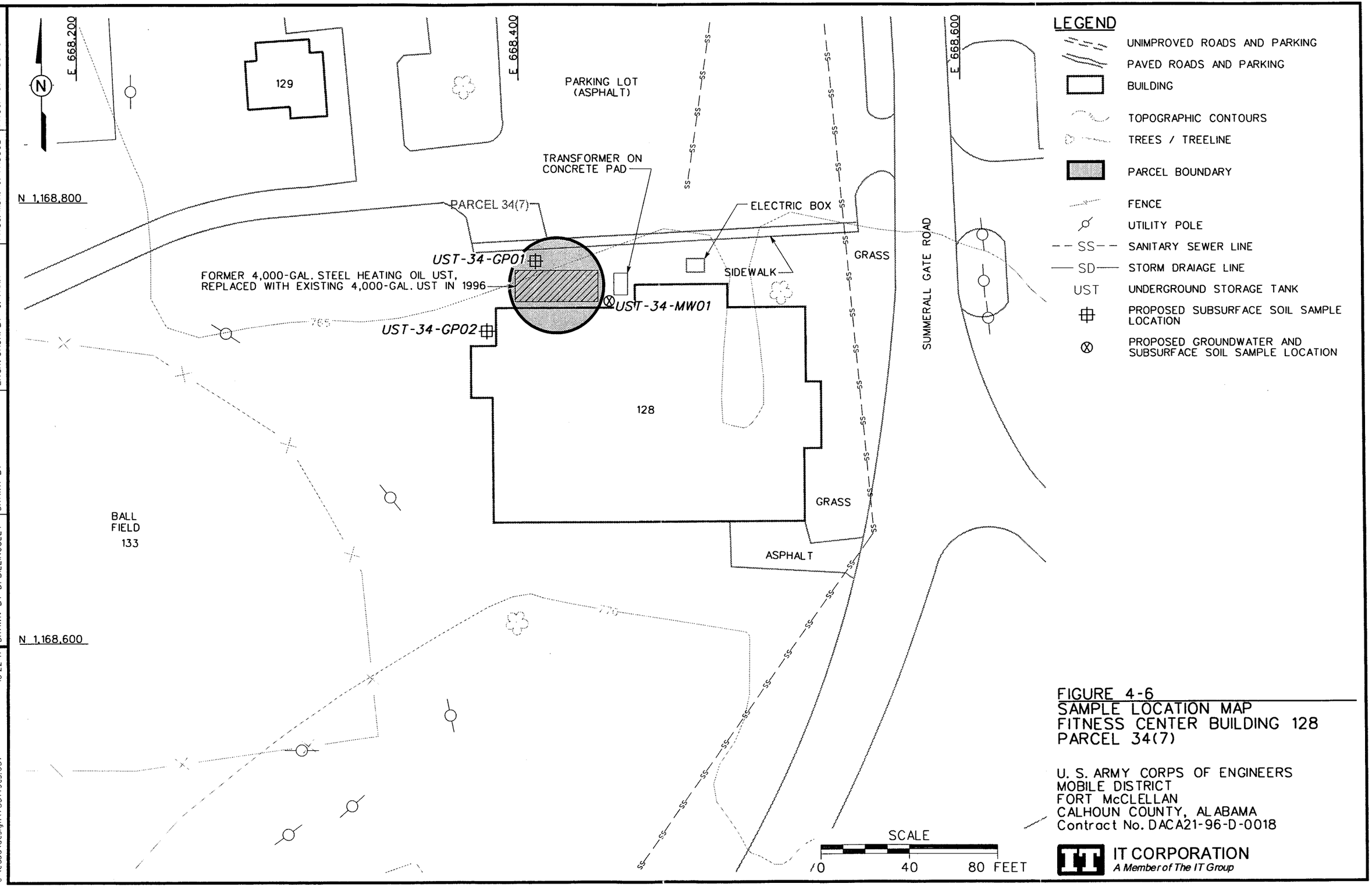

FIGURE 4-6
SAMPLE LOCATION MAP
FITNESS CENTER BUILDING 128
PARCEL 34(7)

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E 668,300

E 668,400

E 668,500

E 668,600

UST-35-GP02

FORMER 2,500-GAL. STEEL UST REPLACED WITH EXISTING 1,000-GAL UST IN 1996

UST-35-MW01

UST-35-GP01

BOILER STACK WITH CONCRETE PAD

PARCEL 35(7)

N 1,169,200

775

WOOD SHED

FIELD HOUSE 130

SUMMERALL GATE ROAD

N 1,169,100

METAL SHED

RACQUETBALL COURTS 137

SIDEWALK

N 1,169,000

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- UTILITY POLE
- SANITARY SEWER LINE
- STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE

0 40 80 FEET

FIGURE 4-7
SAMPLE LOCATION MAP
FIELD HOUSE BUILDING 130
PARCEL 35(7)

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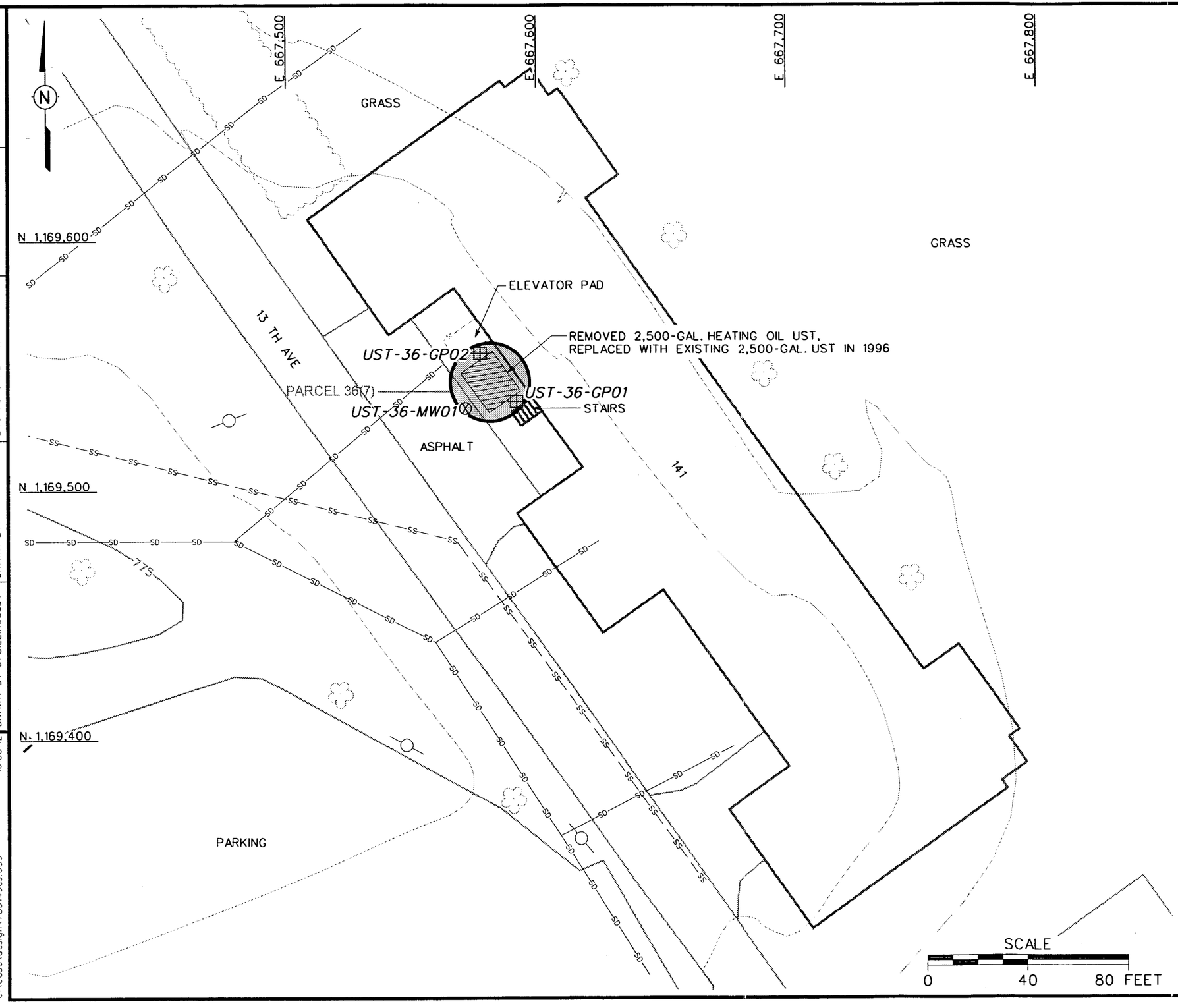

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- FENCE
- UTILITY POLE
- SS — SANITARY SEWER LINE
- SD — STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-8
SAMPLE LOCATION MAP
ADMINISTRATIVE BUILDING 141
PARCEL 36(7)

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CALHOUN COUNTY, ALABAMA
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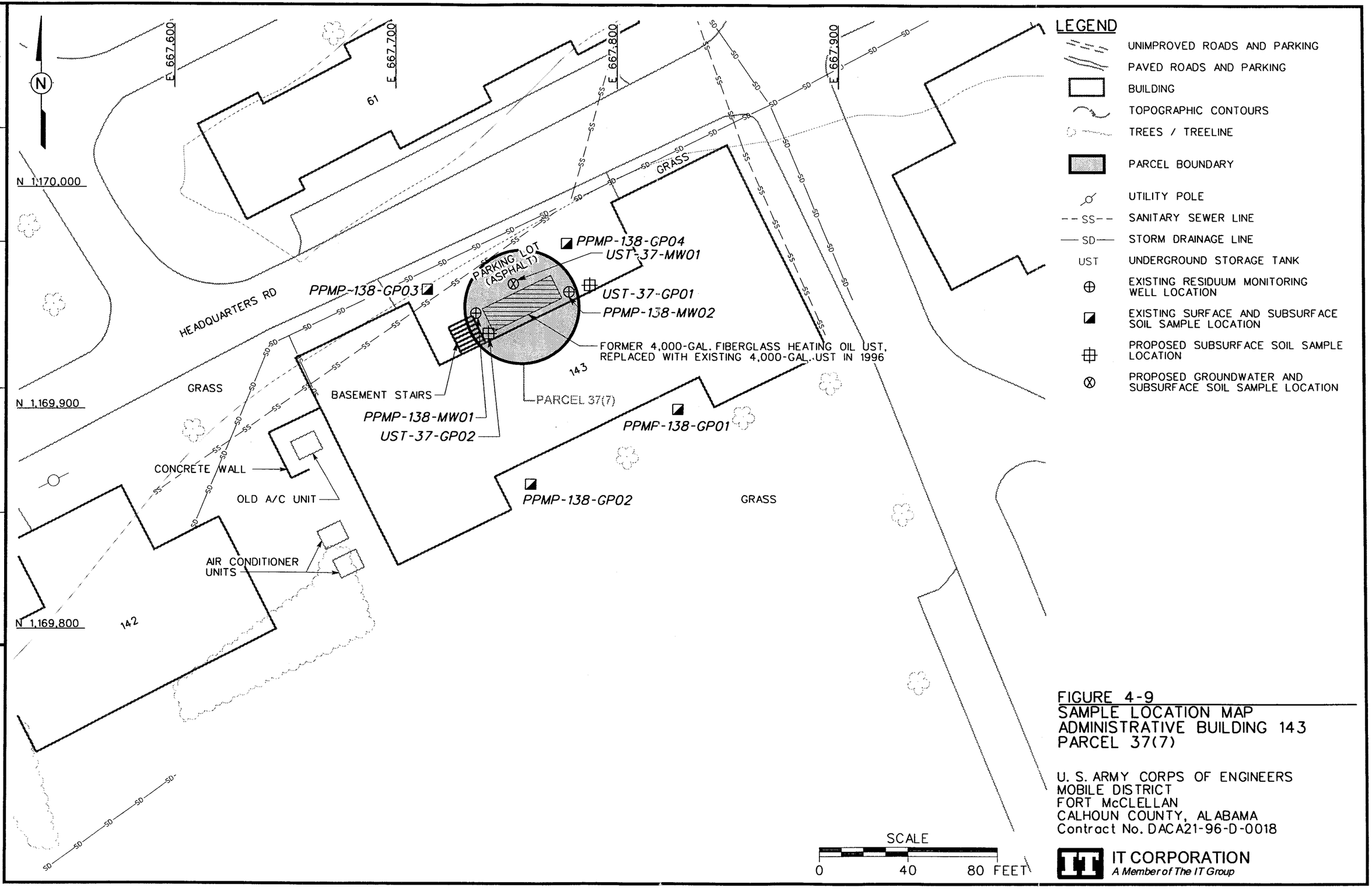

FIGURE 4-9
SAMPLE LOCATION MAP
ADMINISTRATIVE BUILDING 143
PARCEL 37(7)

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CALHOUN COUNTY, ALABAMA
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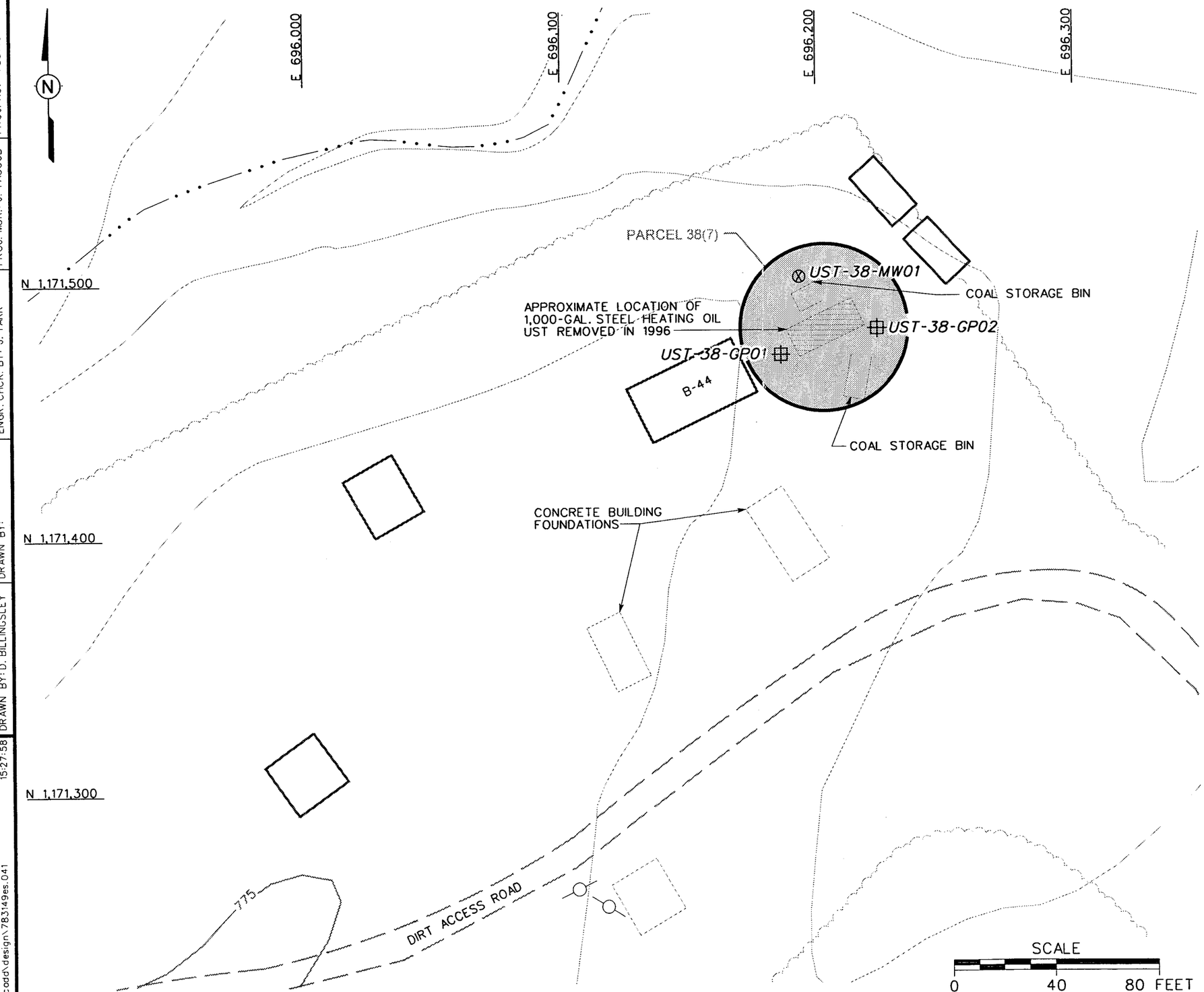

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FIGURE 4-10
SAMPLE LOCATION MAP
BIVOUAC AREA, B-44
PARCEL 38(7)

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CALHOUN COUNTY, ALABAMA
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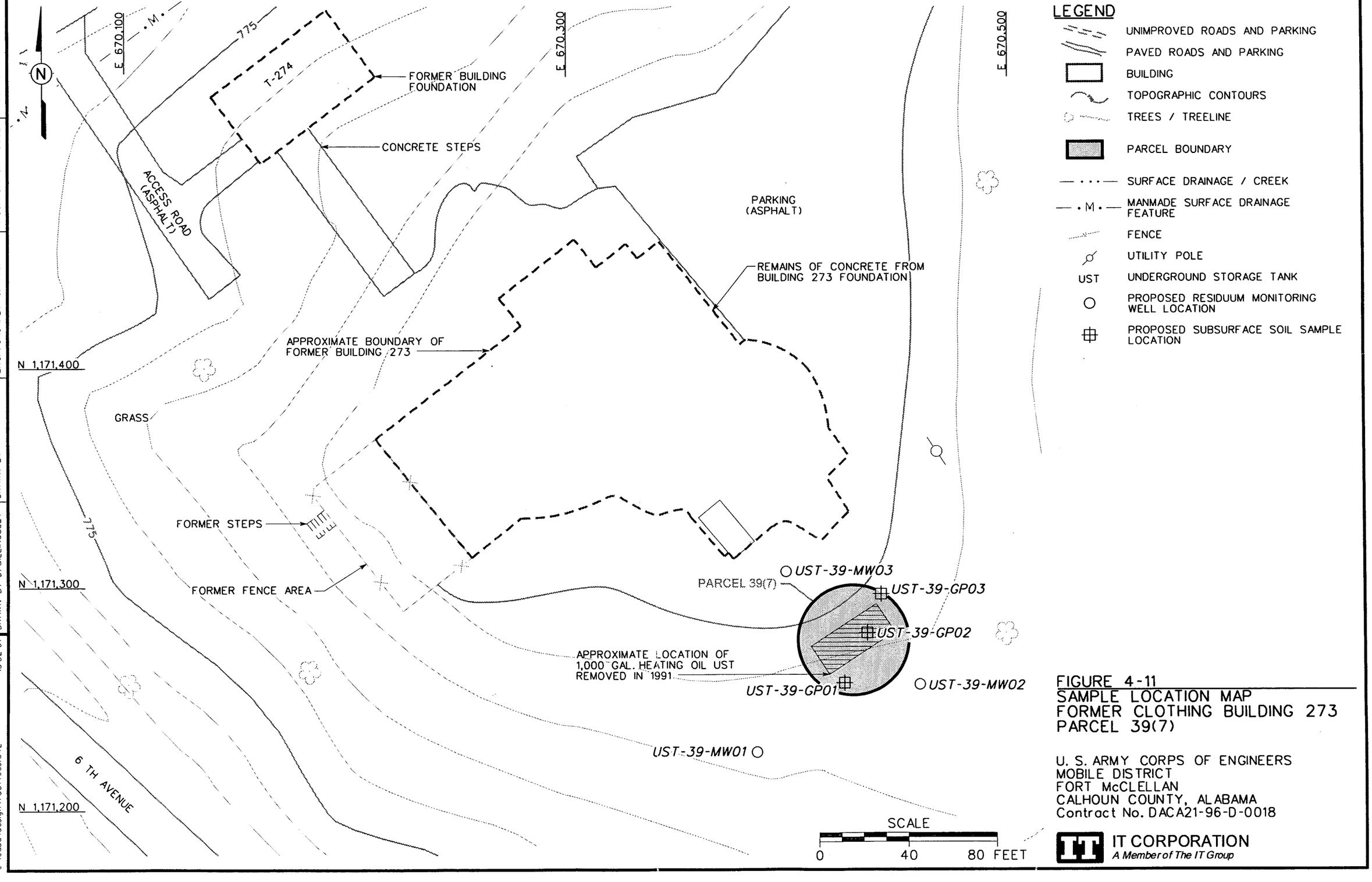

FIGURE 4-11
SAMPLE LOCATION MAP
FORMER CLOTHING BUILDING 273
PARCEL 39(7)

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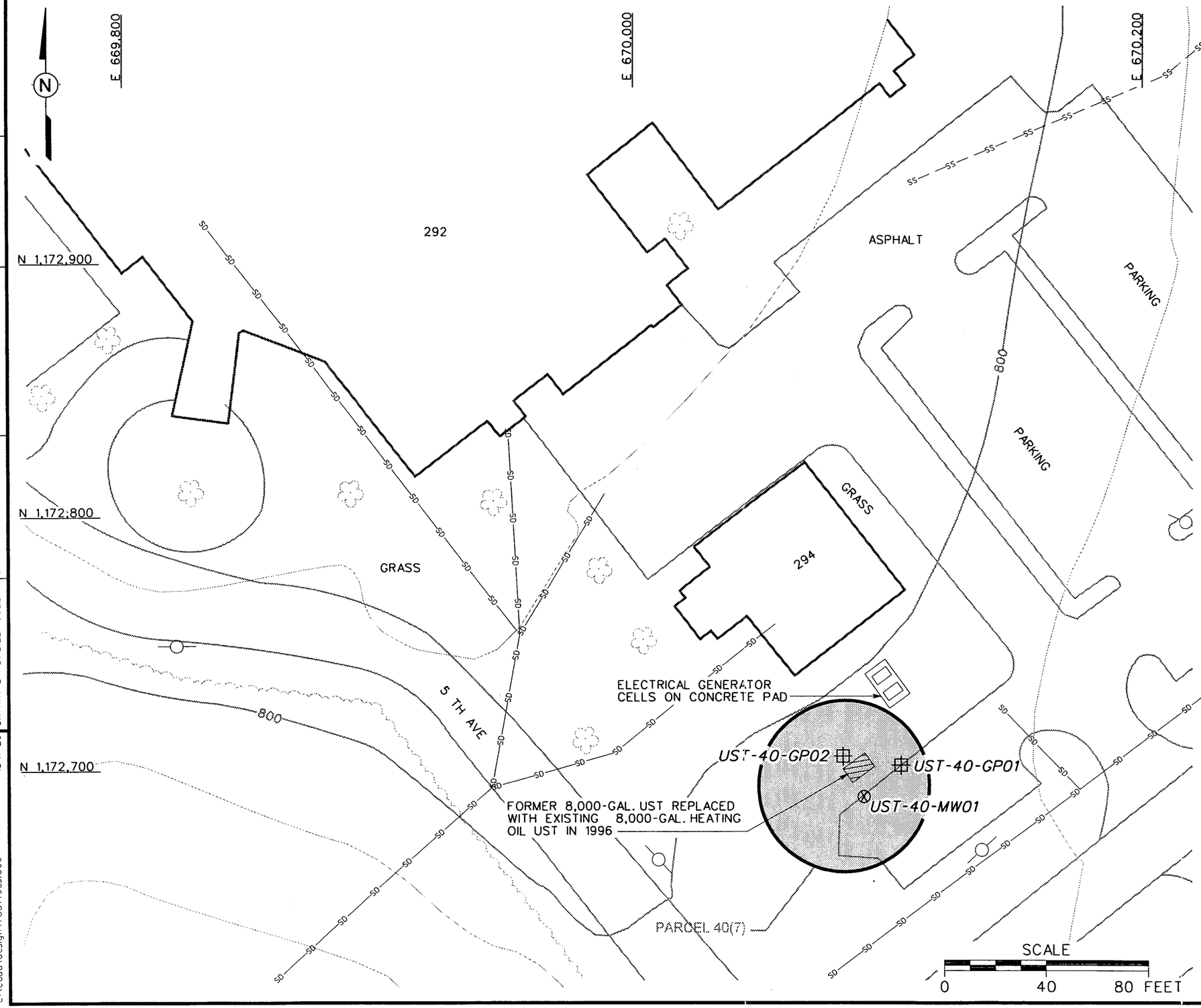

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-12
SAMPLE LOCATION MAP
NOBLE army HOSPITAL
BUILDING 292
PARCEL 40(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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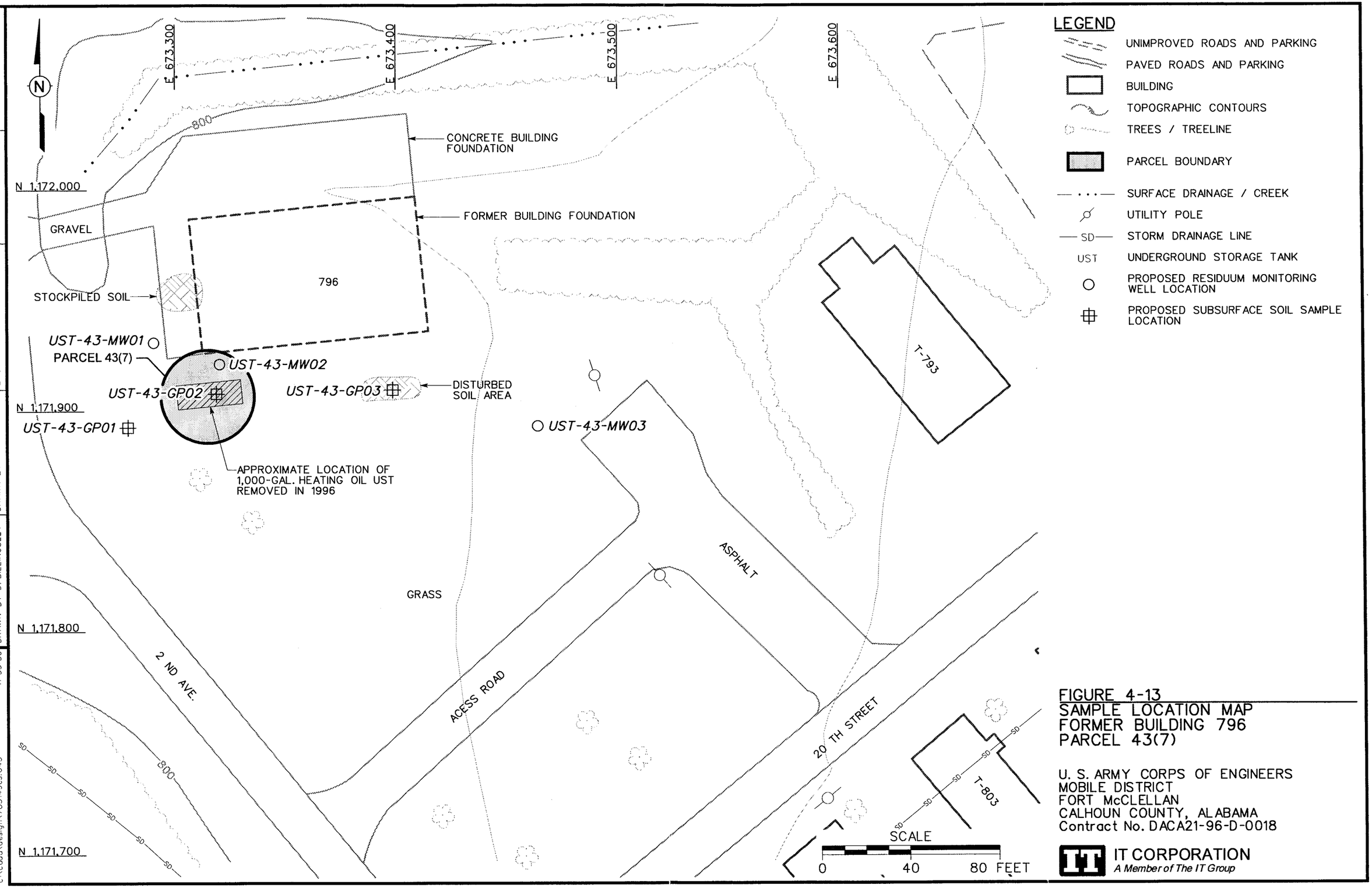

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- UTILITY POLE
- SD — STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED RESIDUUM MONITORING WELL LOCATION
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-13
SAMPLE LOCATION MAP
FORMER BUILDING 796
PARCEL 43(7)

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CALHOUN COUNTY, ALABAMA
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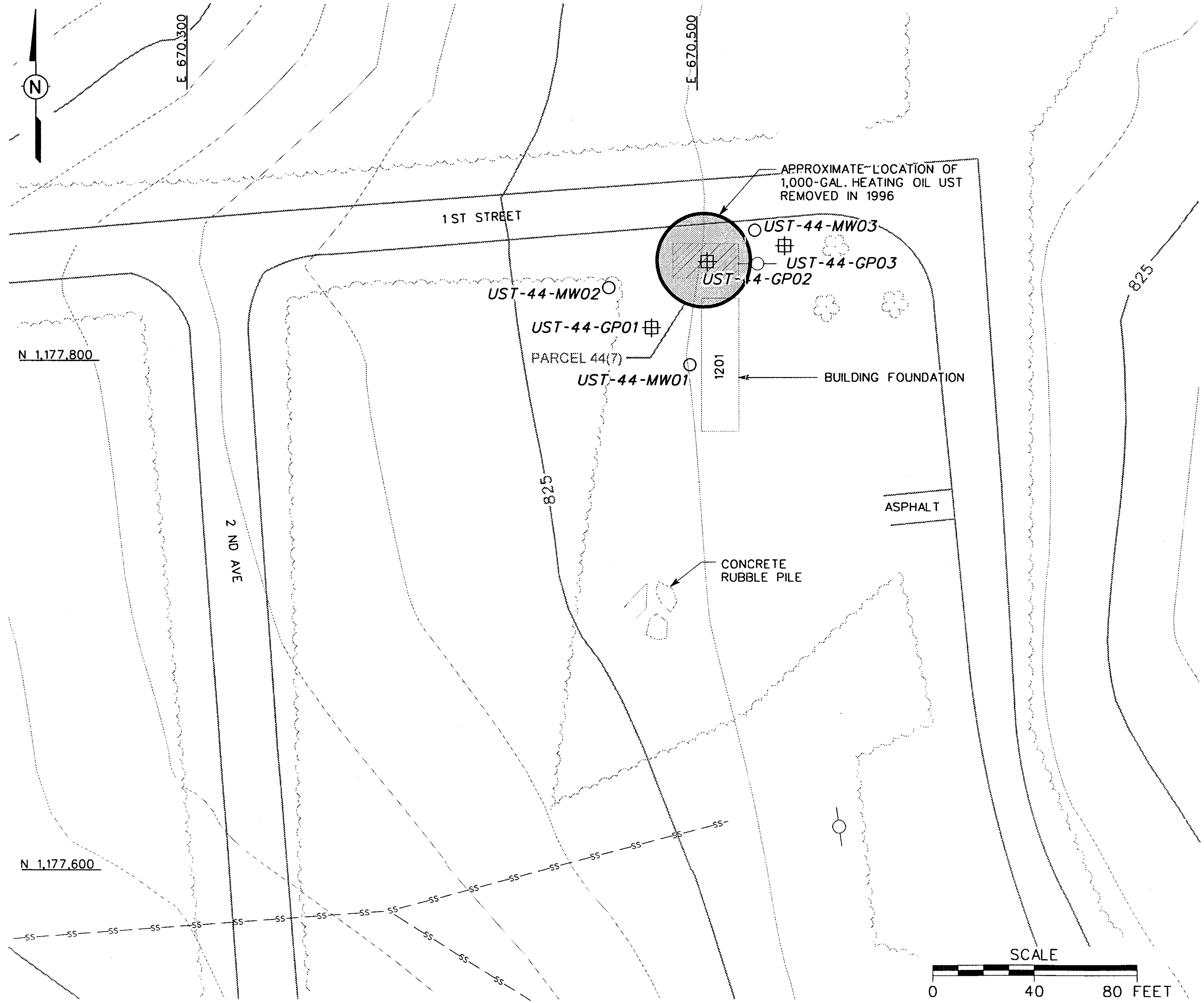

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- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOUR
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- SS — SANITARY SEWER LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED RESIDUUM MONITORING WELL
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-14
SAMPLE LOCATION MAP
FORMER BUILDING 1201
PARCEL 44(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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PROJ. NO.: 783149
INITIATOR: J. TARR
PROJ. MGR.: J. YACOUB
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ENGR. CHCK. BY: J. TARR
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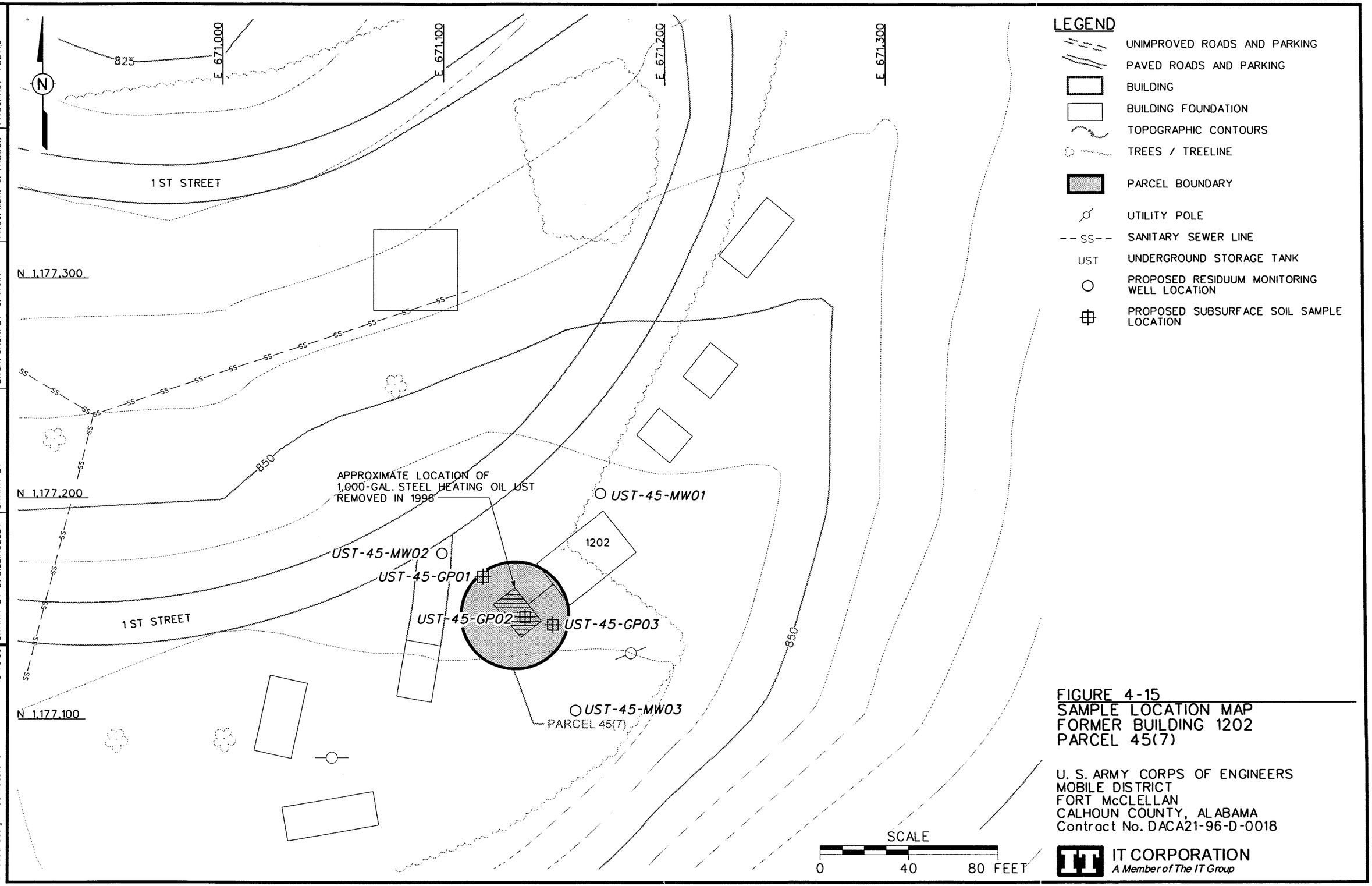

FIGURE 4-15
SAMPLE LOCATION MAP
FORMER BUILDING 1202
PARCEL 45(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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PROJ. NO.: 783149
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N

E 669,600

E 669,800

E 670,000

21 ST STREET

N 1,168,800

N 1,168,700

N 1,168,600

1928

SIDEWALK

FLAMMABLE STORGE SHED

REMOVED UNDERGROUND FUEL LINE

UST-48-GP02

FORMER 1,000-GAL. HEATING OIL UST REPLACED WITH EXISTING 1,000-GAL. UST IN 1996

UST-48-GP01

UST-48-MW01

PARCEL 48(7)

WOOD SHED

WOODS

GRASS

SOUTH BRANCH CREEK

750

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- MANMADE SURFACE DRAINAGE FEATURE
- UTILITY POLE
- SANITARY SEWER LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACAE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-16
SAMPLE LOCATION MAP
BOWLING ALLEY BUILDING 1928
PARCEL 48(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
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N

E 670,800

E 670,900

E 671,000

E 671,100

N 1,168,800

N 1,168,700

N 1,168,600

PARKING

8 TH AVE

BRICK WALL

DENTAL CLINIC
1929

UST-49-GP01

FORMER 1,500-GAL. STEEL UST
REPLACED WITH EXISTING
1,000-GAL. HEATING OIL UST
IN 1996

UST-49-MW01

UST-49-GP02

PARCEL 49(7)

ASPHALT ROAD

PARKING

SCALE
0 40 80 FEET

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORGAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-17
SAMPLE LOCATION MAP
DENTAL CLINIC BUILDING 1929
PARCEL 49(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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PROJ. NO.: 783149

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E 670,500

E 670,700

E 670,900

N 1,169,000

N 1,168,900

N 1,168,800

775

8 TH AVE

COMMISSARY
2041

PARKING

PARKING

ASPHALT

1965

ABOVEGROUND GRILL
ON CONCRETE PAD

UST-50-MW01

APPROXIMATE LOCATION OF
3,000-GAL. STEEL UST
CLOSED IN PLACE IN 1996

UST-50-GP02

UST-50-GP01

PARCEL 50(7)

BRICK WALL

CONCRETE PAD

SD

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- SD — STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-18
SAMPLE LOCATION MAP
PX BUILDING 1965
PARCEL 50(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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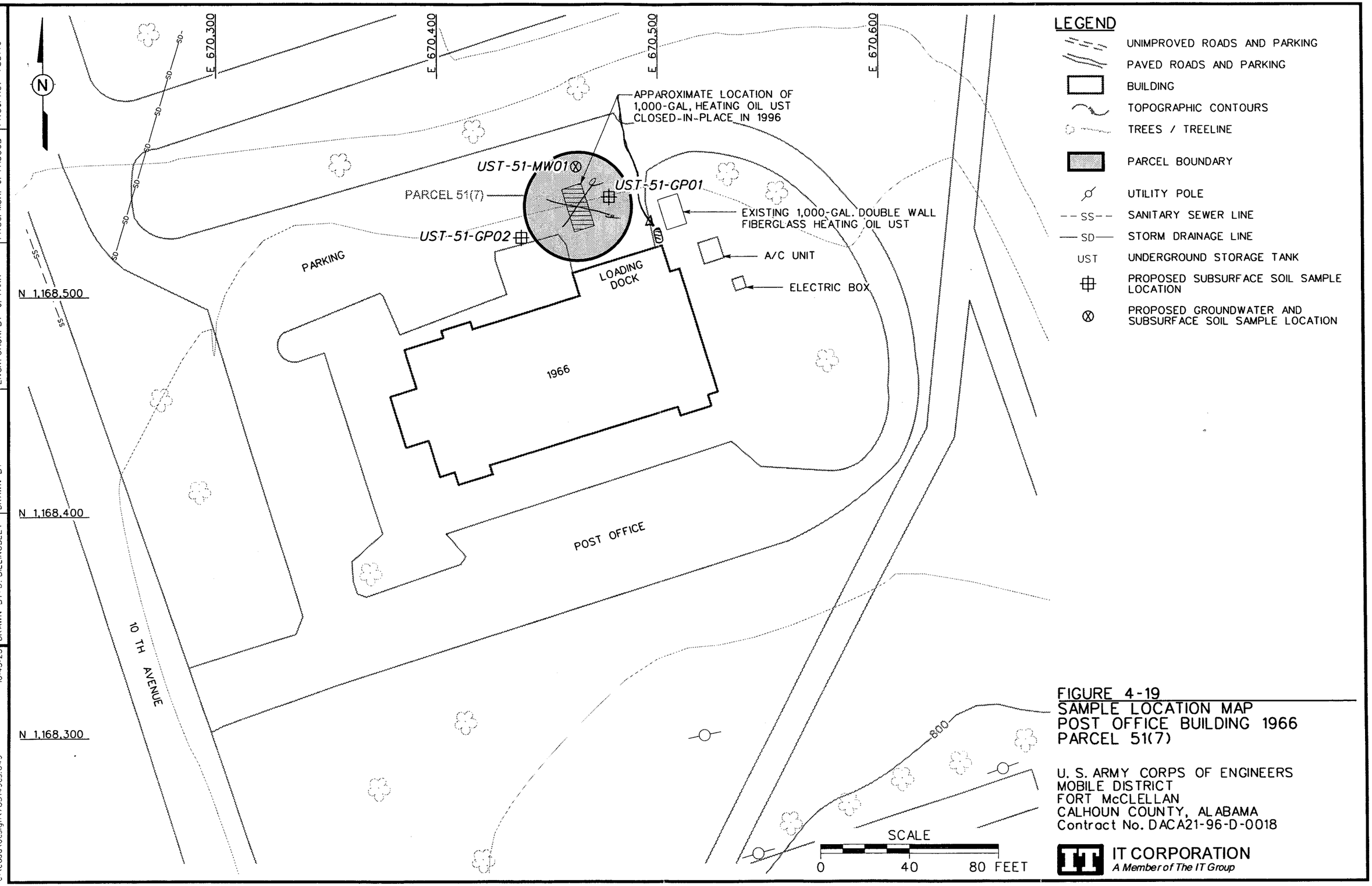

FIGURE 4-19
SAMPLE LOCATION MAP
POST OFFICE BUILDING 1966
PARCEL 51(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
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PROJ. MGR.: J. YACOUB
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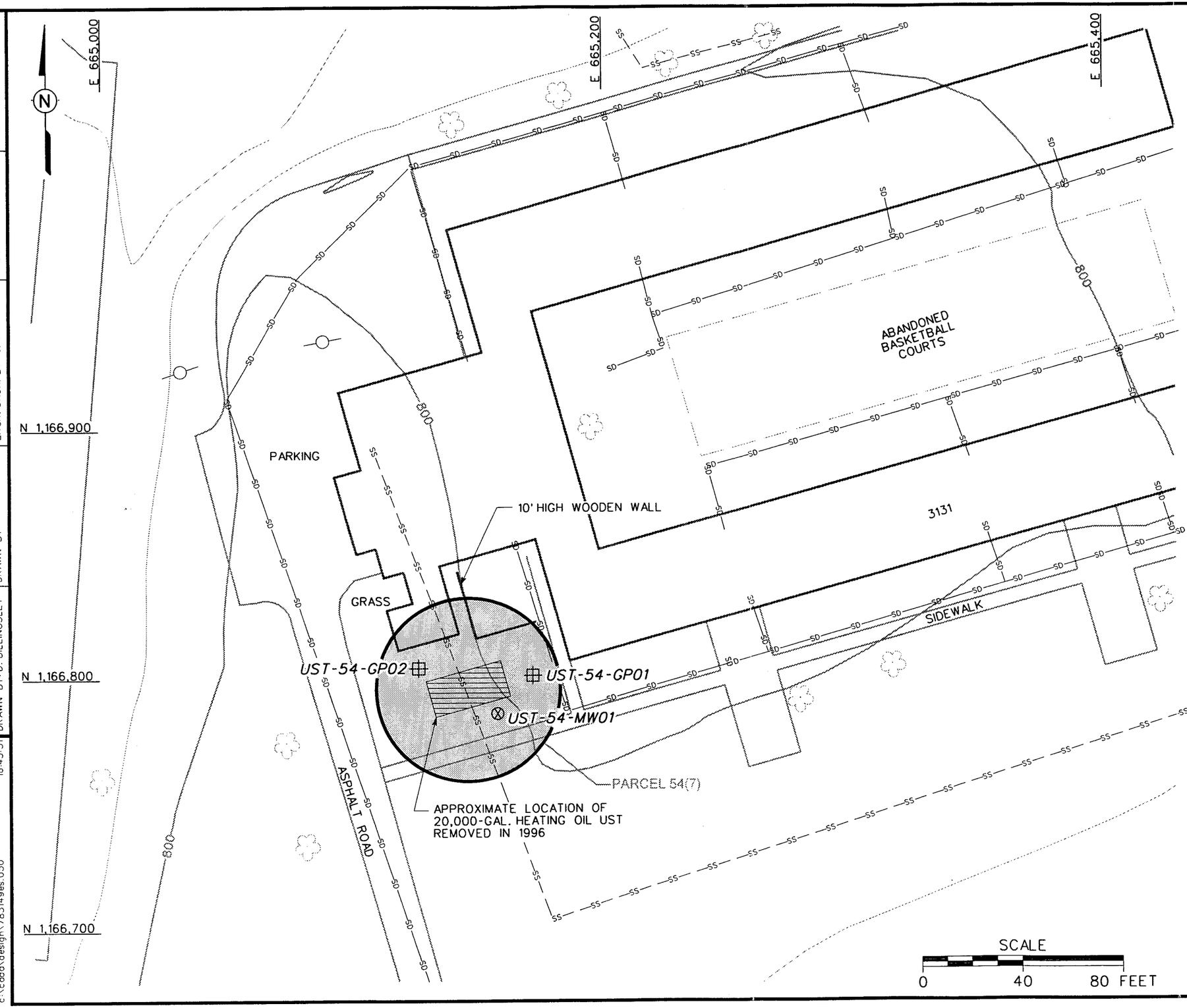

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-20
SAMPLE LOCATION MAP
BARRACKS BUILDING 3131
PARCEL 54(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
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INITIATOR: J. TARR
PROJ. MGR.: J. YACOUB
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PROJ. NO.: 783149
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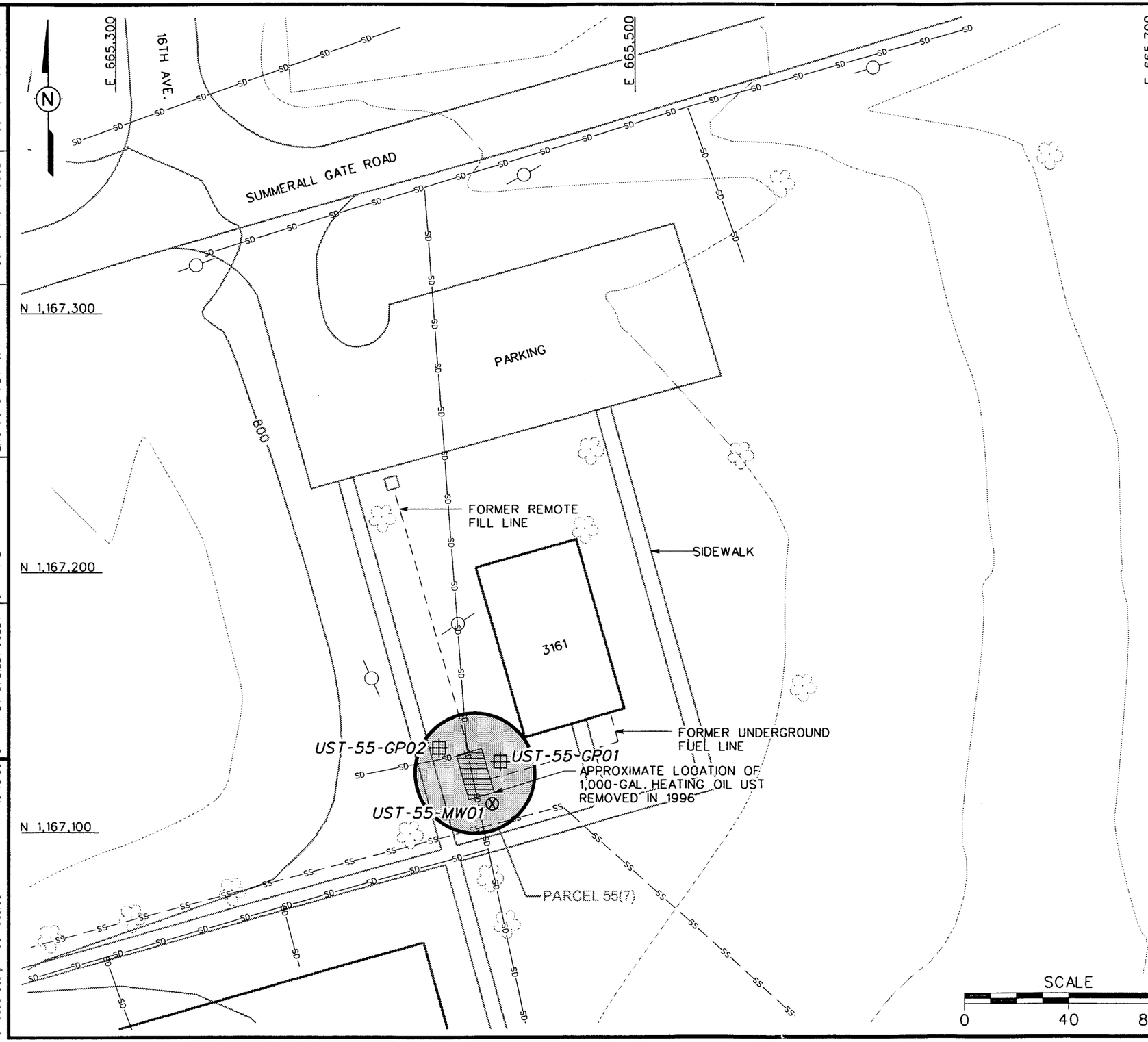

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-21
SAMPLE LOCATION MAP
HEADQUARTERS BUILDING 3161
PARCEL 55(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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INITIATOR: J. TARR
PROJ. MGR.: J. YACOUB
DWG. NO: ...\783149es.051
PROJ. NO.: 783149
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STARTING DATE: 05/27/99
DRAWN BY: D. BILLINGSLEY
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ENGR. CHCK. BY: J. TARR
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INITIATOR: J. TARR
PROJ. MGR.: J. YACOUB
STARTING DATE: 05/27/99
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N

E 666,300

E 666,500

E 666,700

N 1,168,200

N 1,168,100

N 1,168,000

775

750

50

SD

SS

WOODS

A/C UNIT ON CONCRETE SLAB

COMMUNITY CLUB

HIGH VOLTAGE ELECTRIC BOX

3212

APPROXIMATE LOCATION OF 2,500-GAL. UST CLOSED IN PLACE IN 1996

PARCEL 56(7)

UST-56-GP01

UST-56-GP02

UST-56-MW01

EXISTING 2,500-GAL. HEATING OIL UST

CONCRETE SLAB

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- SANITARY SEWER LINE
- STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE

SCALE
0 40 80 FEET

FIGURE 4-22
SAMPLE LOCATION MAP
COMMUNITY CLUB BUILDING 3212
PARCEL 56(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

IT CORPORATION
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INITIATOR: J. TARR
PROJ. MGR.: J. YACOUB
DWG. NO.: ...\78314es.053
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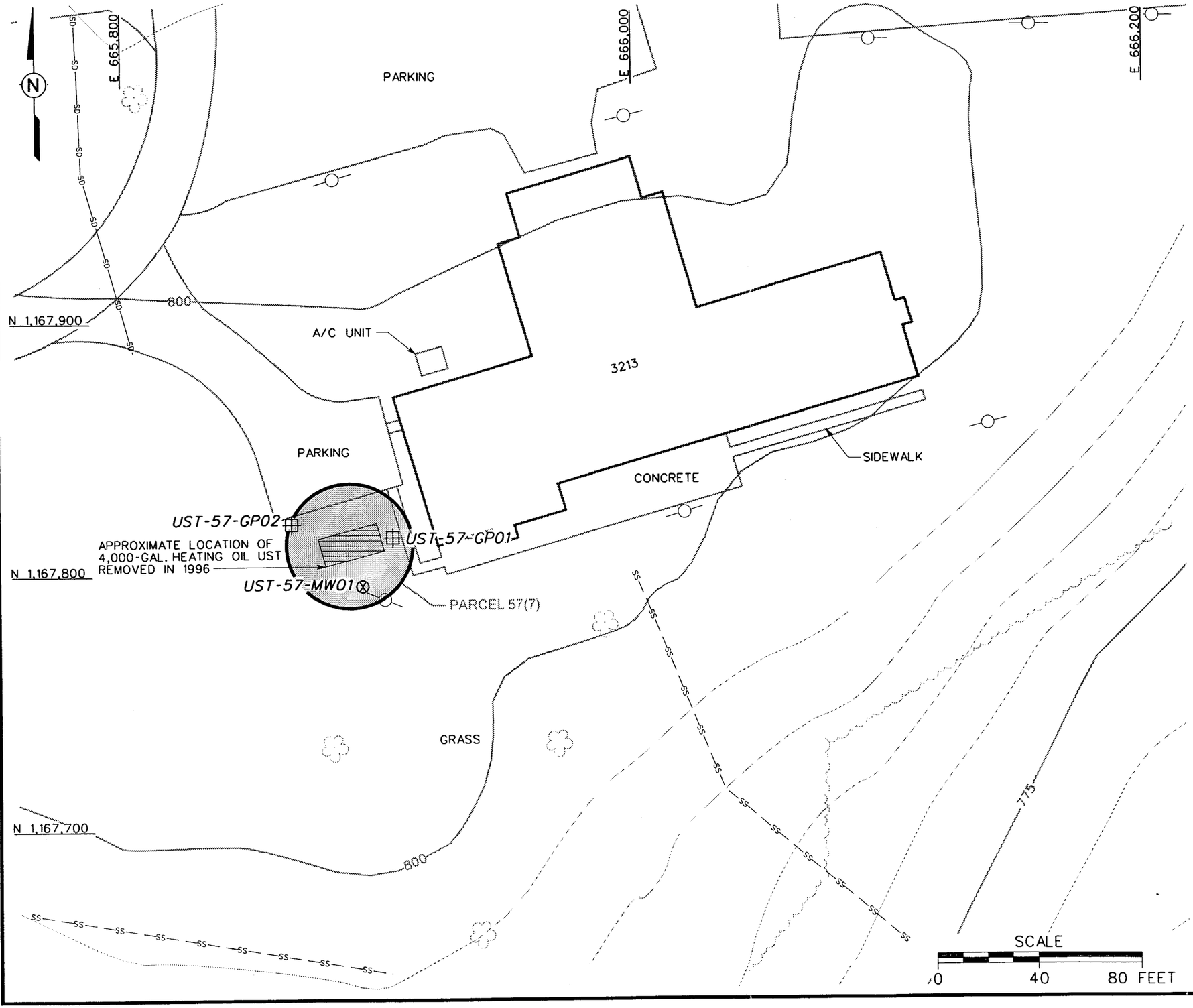

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-23
SAMPLE LOCATION MAP
RECREATION CENTER BUILDING 3213
PARCEL 57(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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A Member of The IT Group

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INITIATOR: J. TARR	ENGR. CHCK. BY: J. TARR
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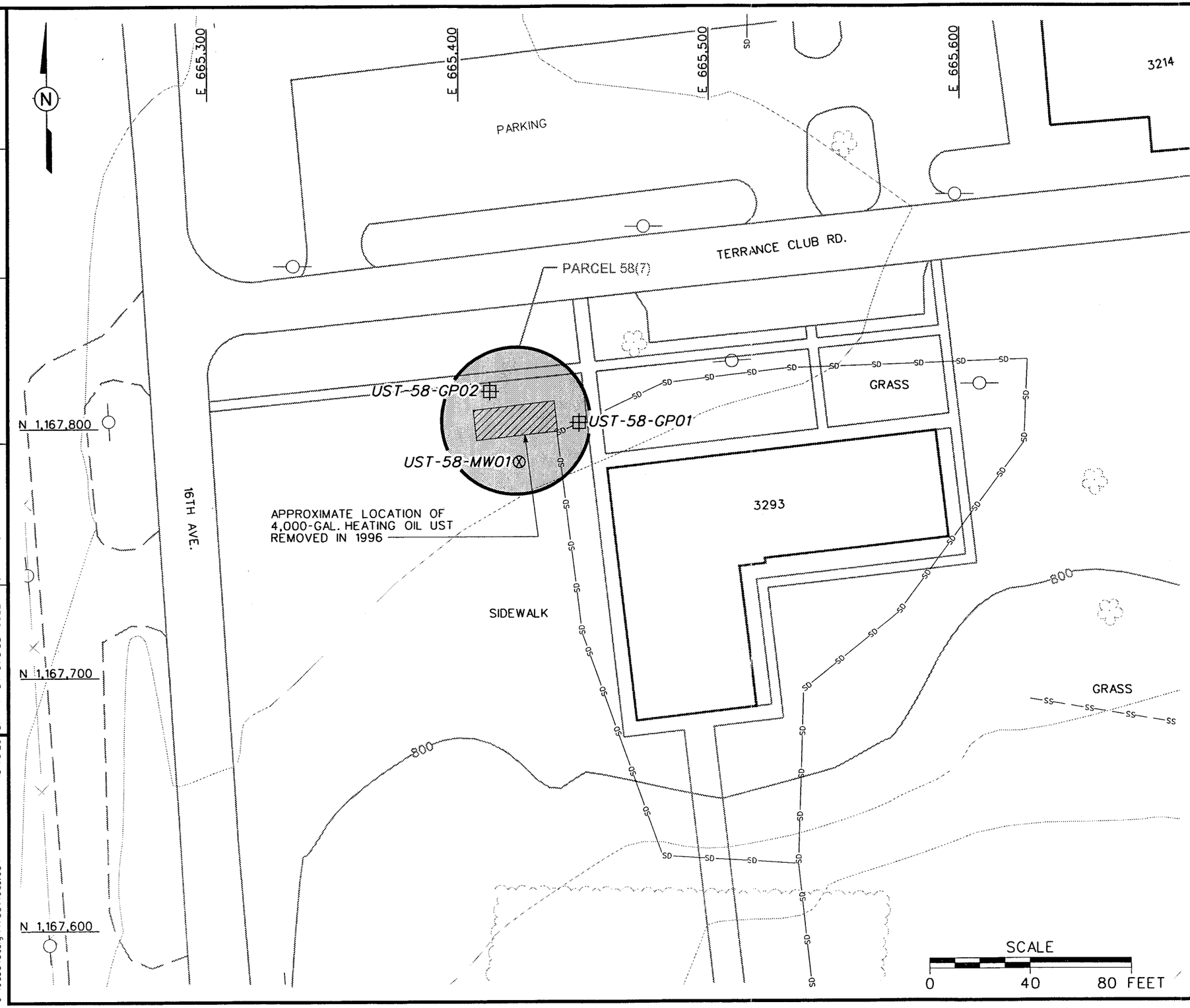

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- FENCE
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-24
SAMPLE LOCATION MAP
CHAPEL BUILDING 3293
PARCEL 58(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

IT CORPORATION
A Member of The IT Group

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N

E 667,900

E 668,100

E 668,300

N 1,169,900

N 1,169,800

N 1,169,700

N 1,169,600

GRASS

GRASS

GRASS

GRASS

161

162

163

PARKING

20 TH STREET

PARKING LOT

STAIRS

PARCEL 63(7)

CONCRETE

UST-63-GP02

UST-63-GP01

UST-63-MW01

2,500-GAL. HEATING OIL
UST REMOVED IN 1996

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- --SS-- SANITARY SEWER LINE
- —SD— STORM DRAINAGE LINE
- UST UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-25
SAMPLE LOCATION MAP
PERSONNEL BUILDING 162
PARCEL 63(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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DWG. NO.: ...\783149es.056
PROJ. NO.: 783149

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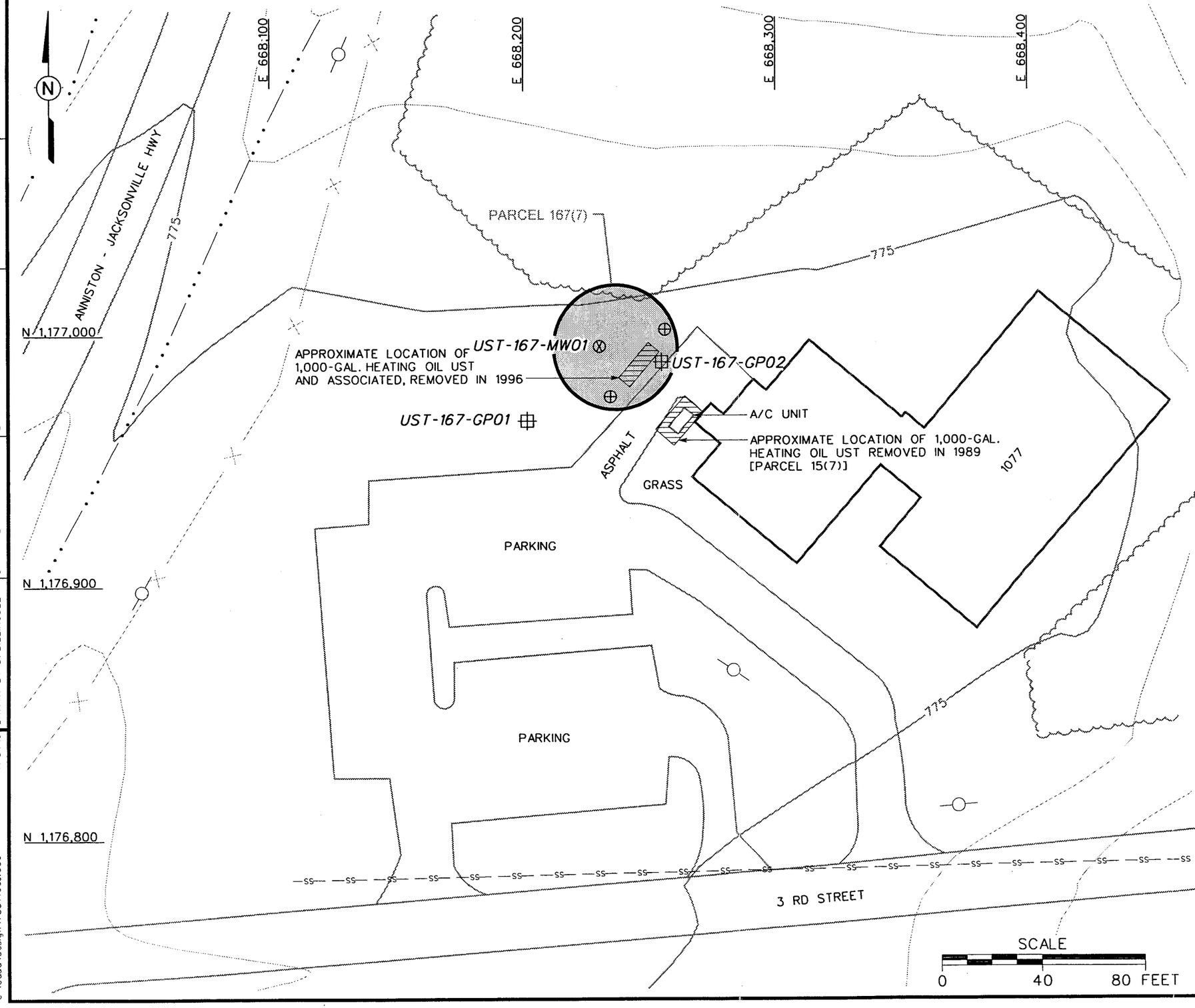

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- FENCE
- UTILITY POLE
- SS — SANITARY SEWER LINE
- UST — UNDERGROUND STORAGE TANK
- EXISTING RESIDUUM MONITORING WELL LOCATION
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-26
SAMPLE LOCATION MAP
WAC MUSEUM BUILDING 1077
PARCEL 167(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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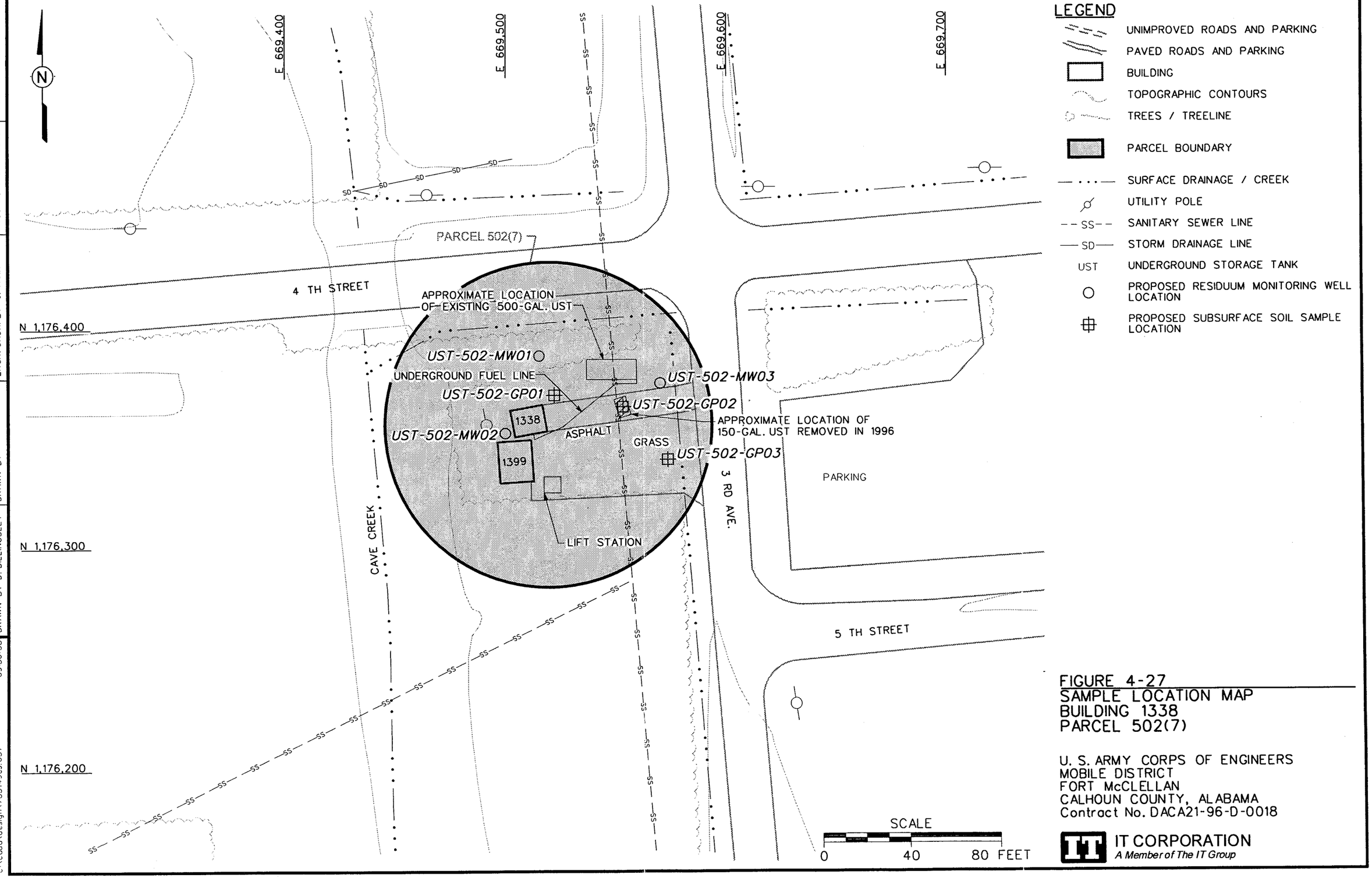

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- UTILITY POLE
- SANITARY SEWER LINE
- STORM DRAINAGE LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED RESIDUUM MONITORING WELL LOCATION
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

FIGURE 4-27
SAMPLE LOCATION MAP
BUILDING 1338
PARCEL 502(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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N

E 669,200
E 669,400
E 669,600
N 1,166,600
N 1,166,500
N 1,166,400

3189
3188
3187
3186
3177
3178
3179

11 TH AVE.
ASPHALT
WOODS

UST-505-MW01
UST-505-GP01
UST-505-GP02
UST-505-MW02
UST-505-GP03
CONCRETE
ABOVEGROUND CONCRETE STORGE RACKS (REMOVED AST LOCATION)
PARCEL 505(7)

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- FENCE
- UTILITY POLE
- --SS-- SANITARY SEWER LINE
- AST ABOVEGROUND STORAGE TANK
- PROPOSED RESIDUUM MONITORING WELL LOCATION
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-28
SAMPLE LOCATION MAP
BUILDING 3179
PARCEL 505(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

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N

E 660,200
E 660,300
E 660,400
E 660,500

N 1,168,400
N 1,168,300
N 1,168,200
N 1,168,100

750
725

ANNISTON JACKSONVILLE HWY.
SUMMERALL TERRACE
TO SUMMERALL GATE ROAD
DIRT ACCESS ROAD

PARCEL 506(7)
EXISTING 150-GAL. UST LOCATED UNDER A 6' x12' CONCRETE PAD
UST-506-GP01
UST-506-GP02
UST-506-MW01
3691
3690
150-GAL. GASOLINE UST CLOSED IN PLACE IN 1996

SS

LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- TOPOGRAPHIC CONTOURS
- TREES / TREELINE
- PARCEL BOUNDARY
- SURFACE DRAINAGE / CREEK
- FENCE
- UTILITY POLE
- SS — SANITARY SEWER LINE
- UST — UNDERGROUND STORAGE TANK
- PROPOSED SUBSURFACE SOIL SAMPLE LOCATION
- PROPOSED GROUNDWATER AND SUBSURFACE SOIL SAMPLE LOCATION

SCALE
0 40 80 FEET

FIGURE 4-29
SAMPLE LOCATION MAP
BUILDING 3691
PARCEL 506(7)

U. S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
FORT McCLELLAN
CALHOUN COUNTY, ALABAMA
Contract No. DACA21-96-D-0018

IT CORPORATION
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Sample Locations And Rationale
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Parcel Number	Building Number	Tank Description	UXO (Yes or NO)	Sample Location	Sample Media	Sample Location Rationale
3	251	One 600-gallon diesel UST was removed, but not replaced in 1994.	No	UST-3-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient of the removed UST. Sample data will indicate if fuel releases (leaks, spills, etc.) have occurred from previous use and if contamination exists upgradient of the UST.
				UST-3-GP02	Subsurface soil	Soil boring for subsurface soil sample will be placed topographically downgradient of the removed 600-gallon UST. Sample data will determine if contamination is present in subsurface soil resulting from past diesel fuel use.
				UST-3-GP03	Subsurface soil	Soil boring for subsurface soil sample will be placed topographically downgradient of the removed 600-gallon UST. Sample data will determine if contamination exists in subsurface soil resulting from past diesel fuel use.
				UST-3-MW01	Groundwater	Sample existing monitoring well within the vicinity of the former 600-gallon diesel UST to determine if diesel fuel has impacted the groundwater. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-3-MW02	Groundwater	Sample existing monitoring well within the vicinity of the former 600-gallon diesel UST to determine if diesel fuel has impacted the groundwater. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-3-MW03	Groundwater	Sample existing monitoring well within the vicinity of the former 600-gallon diesel UST to determine if diesel fuel has impacted the groundwater. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-3-MW04	Groundwater	Sample existing monitoring well within the vicinity of the former 600-gallon diesel UST to determine if diesel fuel has impacted the groundwater. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
9	503	One 20,000-gallon heating oil UST closed in-place in 1994. Replaced with one 20,000-gallon heating oil UST.	No	UST-9-MW01	Groundwater	Permanent monitoring well will be installed downgradient of the former 20,000-gallon UST and on the southeastern corner of Building 503. Sample data will indicate if the groundwater has been impacted by past fuel leaks or spills.
21\22	2109	Four 10,000-gallon gasoline USTs removed and replaced with four new USTs in early 1990. One 1,000-gallon waste oil UST removed and replaced with 2,500-gallon UST.	No	UST-21-MW01	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW02	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW03	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW04	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW05	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW06	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW07	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon USTs. Sample data will determine if contamination exists in groundwater resulting from fuel leaks and/or spills. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW08	Groundwater	Sample existing monitoring well next to the dispenser island in the southern section of the site. Sample data will determine if contamination exists in groundwater resulting from underground fuel line leaks.
				UST-21-MW09	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon steel USTs that were removed in 1991. Sample data will determine if contamination is present in the groundwater from previous fuel use. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW10	Groundwater	Sample existing monitoring well within the vicinity of the four 10,000-gallon steel USTs that were removed in 1991. Sample data will determine if contamination is present in the groundwater from previous fuel use. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-MW11	Groundwater	Sample existing monitoring well located topographically upgradient of the former USTs and existing USTs. Sample data will determine if groundwater contamination exists upgradient of the site. The monitoring well will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-22-MW01	Groundwater	Sample existing monitoring well located in the vicinity of the removed 1,000-gallon UST and existing 2,500-gallon UST. Sample data will determine if the groundwater has been impacted by previous or present fuel use. The monitoring well location will be used to establish a local groundwater flow direction and provide information on groundwater quality in the residuum aquifer.
				UST-21-GP01	Subsurface soil	Soil boring will be placed within the vicinity of the four removed 10,000-gallon steel USTs. Sample data will determine if contamination exists in subsurface soil from previous fuel leaks and/or spills.
				UST-21-GP02	Subsurface soil	Soil boring will be placed within the vicinity of the four removed 10,000-gallon steel USTs. Sample data will determine if contamination exists in subsurface soil from previous fuel leaks and/or spills.
				UST-21-GP03	Subsurface soil	Soil boring will be placed within the vicinity of the four removed 10,000-gallon steel USTs. Sample data will determine if contamination exists in subsurface soil from previous fuel leaks and/or spills.
				UST-21-GP04	Subsurface soil	Soil boring will be placed north of the approximate location of the excavation of the four 5,000-gallon USTs to determine if past fuel usage has impacted subsurface soil.

Table 4-1

Sample Locations And Rationale
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Parcel Number	Building Number	Tank Description	UXO (Yes or NO)	Sample Location	Sample Media	Sample Location Rationale
21\22 (cont'd)	2109	Four 10,000-gallon gasoline USTs removed and replaced with four new USTs in early 1990. One 1,000-gallon waste oil UST removed and replaced with 2,500-gallon UST.	No	UST-21-GP05	Subsurface soil	Soil boring will be placed south of the approximate location of the excavation of the four 5,000-gallon USTs to determine if past fuel usage has impacted subsurface soil.
				UST-22-GP01	Subsurface soil	Soil boring will be placed within the vicinity of the removed 1,000-gallon waste oil UST and existing 2,500-gallon waste oil UST to determine if past fuel usage has impacted subsurface soil.
				UST-22-GP02	Subsurface soil	Soil boring will be placed within the vicinity of the removed 1,000-gallon waste oil UST and existing 2,500-gallon waste oil UST to determine if past fuel usage has impacted subsurface soil.
				UST-22-GP03	Subsurface soil	Soil boring will be placed within the vicinity of the removed 1,000-gallon waste oil UST and existing 2,500-gallon waste oil UST to determine if past fuel usage has impacted subsurface soil.
31	4407	One 1,000-gallon heating oil UST closed in-place in 1994.	No	UST-31-MW01	Groundwater	One monitoring well will be installed downgradient and in the northwestern corner of Building 4400, adjacent to the removed 1,000-gallon heating oil UST. The sample data will determine if groundwater contamination exists from historical use of heating fuel.
33	S-55	One 4,000-gallon heating oil UST removed by IT in 1991.	No	UST-33-MW01	Subsurface soil and groundwater	One subsurface soil sample and one monitoring well will be installed north and topographically downgradient of the former 4,000-gallon heating oil UST. The sample data will determine if soil and groundwater contamination exists from historical use of heating oil. The monitoring well will be used to determine a local groundwater flow direction and site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-33-MW02	Subsurface soil and groundwater	One subsurface soil sample and monitoring well will be installed northeast and topographically downgradient of the former 4,000-gallon heating oil UST. The sample data will determine if soil and/or groundwater contamination exists from historical use of heating oils. The monitoring well will be used to determine a local groundwater flow direction and site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-33-MW03	Subsurface soil and groundwater	One subsurface soil sample and monitoring well will be installed south and topographically upgradient of the former 4,000-gallon heating oil UST. The sample data will determine if soil and groundwater contamination exists upgradient of Building S-55. The monitoring well will be used to determine a local groundwater flow direction and site-specific geology, and provide information on groundwater quality in the residuum aquifer.
34	128	One 4,000-gallon heating oil UST removed and replaced with another 4,000-gallon UST in 1996.	No	UST-34-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample to be placed topographically downgradient of the former 4,000-gallon steel heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-34-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient of the 4,000-gallon steel heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-34-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient of the 4,000-gallon heating oil UST and on the northwestern corner of Building 128. Sample data will indicate if subsurface soil contamination exists upgradient of the UST shown on Figure 4-6.
35	130	One 1,000-gallon heating oil UST removed and replaced with a 2,500-gallon UST in 1996.	No	UST-35-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample to be placed topographically downgradient of the former 2,500-gallon steel heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-35-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient of the 2,5000-gallon steel heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-35-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient of the 2,500-gallon steel heating oil UST and on the northwestern side of Building 130. Sample data will indicate if subsurface soil contamination exists upgradient of the UST shown on Figure 4-7.
36	141	One 2,500-gallon heating oil UST was removed and replaced in 1996 with another 2,500-gallon UST.	No	UST-36-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample to be placed topographically downgradient of the former 2,500-gallon steel heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-36-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient of the 2,5000-gallon steel heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-36-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient of the 2,500-gallon steel heating oil UST and on the northwestern side of Building 141. Sample data will indicate if subsurface soil contamination exists upgradient of the UST shown on Figure 4-8.
37	143	One 4,000-gallon heating oil UST was removed and replaced with another 4,000-gallon UST in 1996.	No	UST-37-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient of the former and existing 4,000-gallon heating oil UST, in the parking lot north of Bldg. 143. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-37-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient of the 4,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-37-GP02	Subsurface soil	Soil boring for subsurface soil sample will be placed topographically upgradient of the 4,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists upgradient of the UST shown on Figure 4-9.
38	B-44	One 1,000-gallon heating oil UST was removed, but not replaced in 1996.	Yes	UST-38-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient of the former 1,000-gallon heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-38-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient of the former 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-38-GP02	Subsurface soil	Soil boring for subsurface soil sample will be placed topographically upgradient of the former 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists upgradient of the UST shown on Figure 4-10.

Table 4-1

Sample Locations And Rationale
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Parcel Number	Building Number	Tank Description	UXO (Yes or NO)	Sample Location	Sample Media	Sample Location Rationale
39	273	One 1,000-gallon heating oil UST was removed by IT in 1991, but was not replaced.	No	UST-39-MW01	Groundwater	Permanent monitoring well will be placed topographically downgradient of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-39-MW02	Groundwater	Permanent monitoring well will be placed topographically downgradient of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-39-MW03	Groundwater	Permanent monitoring well will be placed topographically upgradient (north) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists upgradient of the UST. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-39-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (south) of the 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-39-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed within the approximate vicinity of the former 1,000-gallon heating oil UST. The UST was reportedly removed from the hillside, south-southeast of former Building 273. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
				UST-39-GP03	Subsurface soil	Soil boring for subsurface soil sample will be placed topographically upgradient of the former 1,000-gallon heating oil UST. Sample data will determine if subsurface soil contamination exists upgradient of the former UST shown on Figure 4-11.
40	292	One 8,000-gallon heating oil UST was removed and replaced with a second UST in 1996.	No	UST-40-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient of the former and existing 8,000-gallon heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-40-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (southeast) of the 8,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-40-GP02	Subsurface soil	Soil boring for subsurface soil sample will be placed topographically upgradient (north-northwest) of the former and existing 8,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists upgradient of the UST shown on Figure 4-12.
43	796	One 1,000-gallon heating oil UST was removed in February, 1996.	No	UST-43-MW01	Groundwater	Permanent monitoring well will be placed topographically downgradient (north-northwest) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-43-MW02	Groundwater	Permanent monitoring well will be placed topographically downgradient (north) of the former 1,000-gallon heating oil UST, between the former Building 796 foundation and the approximate location of the UST excavation. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-43-MW03	Groundwater	Permanent monitoring well will be placed topographically upgradient (south-southeast) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists upgradient of the site and former UST. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-43-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (northeast) of the 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-43-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed within the approximate vicinity of the former 1,000-gallon heating oil UST. The exact location of the UST is not known from available records, but is reportedly located on the southern side of former Building 796. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
				UST-43-GP03	Subsurface soil	Soil boring for subsurface soil sample to be placed upgradient of the removed 1,000-gallon UST. Sample data will determine if subsurface soil contamination exists upgradient of the site and former UST shown on Figure 4-13.
44	1201	One 1,000-gallon heating oil UST was removed in February, 1996. Building 1201 was demolished.	Yes	UST-44-MW01	Groundwater	Permanent monitoring well will be placed topographically downgradient (south-southwest) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-44-MW02	Groundwater	Permanent monitoring well will be placed topographically downgradient (south) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-44-MW03	Groundwater	Permanent monitoring well will be placed topographically upgradient (north-northeast) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish
				UST-44-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (southwest) of the former 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-44-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed within the approximate vicinity of the former 1,000-gallon heating oil UST. The exact location of the former UST is reportedly located between 1st Street and the Building 1201 foundation. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
				UST-44-GP03	Subsurface soil	Soil boring for subsurface soil sample to be placed upgradient of the removed 1,000-gallon UST. Sample data will determine if subsurface soil contamination exists upgradient of the site and former UST shown on Figure 4-14.

Table 4-1

Sample Locations And Rationale
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Parcel Number	Building Number	Tank Description	UXO (Yes or NO)	Sample Location	Sample Media	Sample Location Rationale
45	1202	One 1,000-gallon heating oil UST was removed in February, 1996. Building 1202 was demolished.	Yes	UST-45-MW01	Groundwater	Permanent monitoring well will be placed topographically downgradient (north-northwest) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-45-MW02	Groundwater	Permanent monitoring well will be placed topographically downgradient (northwest) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-45-MW03	Groundwater	Permanent monitoring well will be placed topographically upgradient (south-southeast) of the former 1,000-gallon heating oil UST. Sample data will determine if groundwater contamination exists upgradient of the site and former UST. The monitoring well location will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-45-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (northwest) of the 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-45-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed within the approximate vicinity of the former 1,000-gallon heating oil UST shown on Figure 4-15. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
				UST-45-GP03	Subsurface soil	Soil boring for subsurface soil sample to be placed upgradient (south-southeast) of the removed 1,000-gallon UST. Sample data will determine if subsurface soil contamination exists upgradient of the site and former UST shown on Figure 4-15.
48	1928	One 1,000-gallon heating oil UST was removed and replaced in 1996.	No	UST-48-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (south) of the former 1,000-gallon heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-48-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (southwest) of the 1,000-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-48-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northeast) of the 1,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the current and former ust shown on Figure 4-16.
49	1929	One 1,500-gallon heating oil UST was removed and replaced with a 1,000-gallon UST in 1996.	No	UST-49-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (north-northeast) of the former 1,500-gallon heating oil UST and existing 1,000-gallon UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-49-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (north-northeast) of the former 1,500-gallon heating oil UST and existing 1,000-gallon UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-49-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (south-southwest) of the former 1,500-gallon heating oil UST and existing 1,000-gallon UST. Sample data will determine if contamination exists upgradient of the current and former UST shown on Figure 4-17.
50	1965	One 3,000-gallon heating oil UST was closed in place in 1996.	No	UST-50-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (north-northeast) of the removed 3,000-gallon heating oil UST, on the southern side of Building 1965. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-50-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (north-northeast) of the removed 3,000-gallon heating oil UST, on the southern side of Building 1965. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-50-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (south-southwest) of the removed 3,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the UST shown on Figure 4-18.
51	1966	One 1,000-gallon heating oil UST was closed in place and replaced with a second 1,000-gallon double-walled fiberglass UST in 1996.	No	UST-51-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (north-northeast) of the 1,000-gallon heating oil UST that was abandoned in-place on the northern side of Building 1966. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-51-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (north-northeast) of the 1,000-gallon heating oil UST that was abandoned in-place, on the northern side of Building 1966. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-51-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (south-southwest) of the 1,000-gallon heating oil UST that was abandoned in-place, on the northern side of Building 1966. Sample data will determine if contamination exists upgradient of the UST shown on Figure 4-19.
54	3131	One 20,000-gallon heating oil UST was removed in 1996. The UST was not replaced.	Yes	UST-54-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (south-southeast) of the removed 20,000-gallon heating oil UST, on the southwestern side of Building 3131. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-54-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (south-southeast) of the removed 20,000-gallon heating oil UST, on the southwestern side of Building 3131. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-54-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northwest) of the removed 20,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the removed UST shown on Figure 4-20.

Table 4-1

Sample Locations And Rationale
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Fort McClellan, Calhoun County, Alabama

Parcel Number	Building Number	Tank Description	UXO (Yes or NO)	Sample Location	Sample Media	Sample Location Rationale
55	3161	One 1,000-gallon heating oil UST was removed in 1996. The UST was not replaced.	Yes	UST-55-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (south-southeast) of the removed 1,000-gallon heating oil UST, on the southwestern side of Building 3161. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-55-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (south-southeast) of the removed 1,000-gallon heating oil UST, on the southwestern side of Building 3161. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-55-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northwest) of the removed 1,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the removed UST shown on Figure 4-21.
56	3212	One 2,500-gallon heating oil UST was closed in place and replaced with a second UST in 1996. C109	No	UST-56-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (south-southeast) of the 2,500-gallon heating oil UST that was abandoned in-place, on the southeastern side of Building 3212. Sample data will determine if groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-56-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (south-southeast) of the 2,500-gallon heating oil UST that was abandoned in-place, on the southeastern side of Building 3212. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
				UST-56-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northwest) of the 2,500-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the 2,500-gallon heating oil UST that was abandoned in-place. The existing UST and abandoned UST are shown on Figure 4-22.
57	3213	One 4,000-gallon heating oil UST was removed in 1996. The UST was not replaced.	No	UST-57-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (south-southeast) of the removed 4,000-gallon heating oil UST, on the southeastern side of Building 3213. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-57-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (south-southeast) of the removed 4,000-gallon heating oil UST, on the southwestern side of Building 3213. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-57-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northwest) of the removed 4,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the former UST shown on Figure 4-23.
58	3293	One 4,000-gallon heating oil UST was removed in 1996. The UST was not replaced.	No	UST-58-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (south-southeast) of the removed 4,000-gallon heating oil UST, near the northwestern corner of Building 3293. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-58-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (south-southeast) of the removed 4,000-gallon heating oil UST, near the northwestern corner of Building 3293. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-58-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northwest) of the removed 4,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the former UST shown on Figure 4-24.
63	162	One 2,500-gallon heating oil UST was removed in 1996. The UST was not replaced.	No	UST-63-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (east/southeast) of the removed 2,500-gallon heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-63-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed northeast of the removed 2,500-gallon heating oil UST, on the southern side of Building 162. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-63-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (north-northwest) of the removed 2,500-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the former UST shown on Figure 4-25.
167	1077	One 1,000-gallon heating oil UST was removed in August, 1996. The UST was not replaced.	No	UST-167-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (west/northwest) of the removed 1,000-gallon heating oil UST. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills. The monitoring well will be used to provide information on groundwater quality in the residuum aquifer.
				UST-167-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (west/northwest) of the removed 1,000-gallon heating oil UST, on the northwestern side of Building 1077. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-167-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (east/southeast) of the removed 1,000-gallon heating oil UST. Sample data will determine if contamination exists upgradient of the former UST shown on Figure 4-26.
502	1338	One 150-gallon gasoline UST was removed and replaced with a second 500-gallon UST in 1996.	No	UST-502-MW01	Groundwater	Permanent monitoring well will be placed topographically downgradient (west/northwest) of the removed 150-gallon heating oil UST located on the eastern side of Building 1338. Sample data will determine if groundwater contamination exists from previous leaks or spills. Monitoring well will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-502-MW02	Groundwater	Permanent monitoring well will be placed topographically downgradient (west/northwest) of the removed 150-gallon heating oil UST located on the eastern side of Building 1338. Sample data will determine if groundwater contamination exists from previous leaks or spills. Monitoring well will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-502-MW03	Groundwater	Permanent monitoring well will be placed topographically upgradient of the former 150-gallon UST excavation area. Sample data will determine if contamination exists upgradient of the former UST. Monitoring well will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.

Table 4-1

Sample Locations And Rationale
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Parcel Number	Building Number	Tank Description	UXO (Yes or N0)	Sample Location	Sample Media	Sample Location Rationale
502 (cont'd)	1338	One 150-gallon gasoline UST was removed and replaced with a second 500-gallon UST in 1996.	No	UST-502-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (west/northwest) of the removed 150-gallon heating oil UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-502-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed within the vicinity of the removed 150-gallon heating oil UST excavation area. Sample data will determine if residual soil contamination exists within the area of the removed UST shown on Figure 4-27.
				UST-502-GP03	Subsurface soil	Soil boring for subsurface soil sample to be placed upgradient of the removed 150-gallon UST excavation area. Sample data will determine if contamination exists upgradient of the former UST shown on Figure 4-27.
505	3179	One 1,400-gallon gasoline UST was removed by IT in April, 1991. Location of the removed UST is not known.	No	UST-505-MW01	Groundwater	One permanent monitoring well will be installed topographically downgradient and north/northwest of Building 3179. Sample data will indicate if groundwater contamination exists from the former 1,400-gallon UST. The monitoring well will be used to establish a local groundwater flow direction, site-specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-505-MW02	Groundwater	One permanent monitoring well will be installed downgradient and west of Building 3179. Sample data will indicate if groundwater contamination exists from the former 1,400-gallon UST. The monitoring well will be used to establish a local groundwater flow direction, site specific geology, and provide information on groundwater quality in the residuum aquifer.
				UST-505-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (west/northwest) of Building 3179. Sample data will indicate if residual soil contamination exists from previous leaks or spills.
				UST-505-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed on the eastern side of Building 3179 and topographically upgradient of Building 3179 shown on Figure 4-28. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
				UST-505-GP03	Subsurface soil	Soil boring for subsurface soil sample to be placed on the southern side of Building 3179. Sample data will determine if subsurface soil contamination exists from previous leaks or spills.
506	3691	One 150-gallon gasoline UST closed in place and replaced with a second 150-gallon UST in 1996.	No	UST-506-MW01	Subsurface soil and groundwater	Permanent monitoring well and subsurface soil sample will be placed topographically downgradient (west) of the150-gallon gasoline UST abandoned in-place in the southeastern corner of Building 3691. Sample data will determine if either subsurface soil or groundwater contamination exists from previous leaks or spills.
				UST-506-GP01	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically downgradient (west/northwest) of the abandoned 150-gallon gasoline UST. Sample data will indicate if subsurface soil contamination exists from previous leaks or spills.
				UST-506-GP02	Subsurface soil	Soil boring for subsurface soil sample to be placed topographically upgradient (east/southeast) of the abandoned 150-gallon gasoline UST. Sample data will determine if contamination exists upgradient of the UST shown on Figure 4-29.

Table 4-2

Subsurface Soil Sample Designations and QA/QC Sample Quantities
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Matrix	Sample Depth (ft)	QA/QC Samples			Analytical Suite
				Field Duplicates	Field Splits	MS/MSD	
UST-3-GP01	UST-3-GP01-DS-CJ0001-REG	soil	a				BTEX, PAHs, and Pb
UST-3-GP02	UST-3-GP02-DS-CJ0002-REG	soil	a				BTEX, PAHs, and Pb
UST-3-GP03	UST-3-GP03-DS-CJ0003-REG	soil	a				BTEX, PAHs, and Pb
UST-21-GP01	UST-21-GP01-DS-CJ0004-REG	soil	a				BTEX, PAHs, and Pb
UST-21-GP02	UST-21-GP02-DS-CJ0005-REG	soil	a				BTEX, PAHs, and Pb
UST-21-GP03	UST-21-GP03-DS-CJ0006-REG	soil	a				BTEX, PAHs, and Pb
UST-21-GP04	UST-21-GP04-DS-CJ0007-REG	soil	a				BTEX, PAHs, and Pb
UST-21-GP05	UST-21-GP05-DS-CJ0008-REG	soil	a				BTEX, PAHs, and Pb
UST-22-GP01	UST-22-GP01-DS-CJ0009-REG	soil	a				BTEX, PAHs, and Pb
UST-22-GP02	UST-22-GP02-DS-CJ0010-REG	soil	a				BTEX, PAHs, and Pb
UST-22-GP03	UST-22-GP03-DS-CJ0011-REG	soil	a				BTEX, PAHs, and Pb
UST-33-MW01	UST-33-MW01-DS-CJ0012-REG	soil	a	UST-33-MW01-DS-CJ0013-FD			BTEX, PAHs, and Pb
UST-33-MW02	UST-33-MW02-DS-CJ0014-REG	soil	a				BTEX, PAHs, and Pb
UST-33-MW03	UST-33-MW03-DS-CJ0015-REG	soil	a				BTEX, PAHs, and Pb
UST-34-MW01	UST-34-MW01-DS-CJ0016-REG	soil	a				BTEX, PAHs, and Pb
UST-34-GP01	UST-34-GP01-DS-CJ0017-REG	soil	a				BTEX, PAHs, and Pb
UST-34-GP02	UST-34-GP02-DS-CJ0018-REG	soil	a				BTEX, PAHs, and Pb
UST-35-MW01	UST-35-MW01-DS-CJ0019-REG	soil	a				BTEX, PAHs, and Pb
UST-35-GP01	UST-35-GP01-DS-CJ0020-REG	soil	a				BTEX, PAHs, and Pb
UST-35-GP02	UST-35-GP02-DS-CJ0021-REG	soil	a				BTEX, PAHs, and Pb
UST-36-MW01	UST-36-MW01-DS-CJ0022-REG	soil	a	UST-36-MW01-DS-CJ0023-FD	UST-36-MW01-DS-CJ0024-FS	UST-36-MW01-DS-CJ0022-MS\MSD	BTEX, PAHs, and Pb
UST-36-GP01	UST-36-GP01-DS-CJ0025-REG	soil	a				BTEX, PAHs, and Pb
UST-36-GP02	UST-36-GP02-DS-CJ0026-REG	soil	a				BTEX, PAHs, and Pb
UST-37-MW01	UST-37-MW01-DS-CJ0027-REG	soil	a				BTEX, PAHs, and Pb
UST-37-GP01	UST-37-GP01-DS-CJ0028-REG	soil	a				BTEX, PAHs, and Pb
UST-37-GP02	UST-37-GP02-DS-CJ0029-REG	soil	a				BTEX, PAHs, and Pb
UST-38-MW01	UST-38-MW01-DS-CJ0030-REG	soil	a				BTEX, PAHs, and Pb
UST-38-GP01	UST-38-GP01-DS-CJ0031-REG	soil	a				BTEX, PAHs, and Pb
UST-38-GP02	UST-38-GP02-DS-CJ0032-REG	soil	a	UST-38-GP02-DS-CJ0033-FD			BTEX, PAHs, and Pb
UST-39-GP01	UST-39-GP01-DS-CJ0034-REG	soil	a				BTEX, PAHs, and Pb
UST-39-GP02	UST-39-GP02-DS-CJ0035-REG	soil	a				BTEX, PAHs, and Pb
UST-39-GP03	UST-39-GP03-DS-CJ0036-REG	soil	a				BTEX, PAHs, and Pb

Table 4-2

Subsurface Soil Sample Designations and QA/QC Sample Quantities
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Matrix	Sample Depth (ft)	QA/QC Samples			Analytical Suite
				Field Duplicates	Field Splits	MS/MSD	
UST-40-MW01	UST-40-MW01-DS-CJ0037-REG	soil	a				BTEX, PAHs, and Pb
UST-40-GP01	UST-40-GP01-DS-CJ0038-REG	soil	a				BTEX, PAHs, and Pb
UST-40-GP02	UST-40-GP02-DS-CJ0039-REG	soil	a				BTEX, PAHs, and Pb
UST-43-GP01	UST-43-GP01-DS-CJ0040-REG	soil	a				BTEX, PAHs, and Pb
UST-43-GP02	UST-43-GP02-DS-CJ0041-REG	soil	a				BTEX, PAHs, and Pb
UST-43-GP03	UST-43-GP03-DS-CJ0042-REG	soil	a	UST-43-GP03-DS-CJ0043-FD	UST-43-GP03-DS-CJ0044-FS	UST-43-GP03-DS-CJ0042-MS\MSD	BTEX, PAHs, and Pb
UST-44-GP01	UST-44-GP01-DS-CJ0045-REG	soil	a				BTEX, PAHs, and Pb
UST-44-GP02	UST-44-GP02-DS-CJ0046-REG	soil	a				BTEX, PAHs, and Pb
UST-44-GP03	UST-44-GP03-DS-CJ0047-REG	soil	a				BTEX, PAHs, and Pb
UST-45-GP01	UST-45-GP01-DS-CJ0048-REG	soil	a				BTEX, PAHs, and Pb
UST-45-GP02	UST-45-GP02-DS-CJ0049-REG	soil	a				BTEX, PAHs, and Pb
UST-45-GP03	UST-45-GP03-DS-CJ0050-REG	soil	a				BTEX, PAHs, and Pb
UST-48-MW01	UST-48-MW01-DS-CJ0051-REG	soil	a				BTEX, PAHs, and Pb
UST-48-GP01	UST-48-GP01-DS-CJ0052-REG	soil	a	UST-48-GP01-DS-CJ0053-FD			BTEX, PAHs, and Pb
UST-48-GP02	UST-48-GP02-DS-CJ0054-REG	soil	a				BTEX, PAHs, and Pb
UST-49-MW01	UST-49-MW01-DS-CJ0055-REG	soil	a				BTEX, PAHs, and Pb
UST-49-GP01	UST-49-GP01-DS-CJ0056-REG	soil	a				BTEX, PAHs, and Pb
UST-49-GP02	UST-49-GP02-DS-CJ0057-REG	soil	a				BTEX, PAHs, and Pb
UST-50-MW01	UST-50-MW01-DS-CJ0058-REG	soil	a				BTEX, PAHs, and Pb
UST-50-GP01	UST-50-GP01-DS-CJ0059-REG	soil	a				BTEX, PAHs, and Pb
UST-50-GP02	UST-50-GP02-DS-CJ0060-REG	soil	a				BTEX, PAHs, and Pb
UST-51-MW01	UST-51-MW01-DS-CJ0061-REG	soil	a				BTEX, PAHs, and Pb
UST-51-GP01	UST-51-GP01-DS-CJ0062-REG	soil	a	UST-51-GP01-DS-CJ0063-FD	UST-51-GP01-DS-CJ0064-FS	UST-51-GP01-DS-CJ0062-MS\MSD	BTEX, PAHs, and Pb
UST-51-GP02	UST-51-GP02-DS-CJ0065-REG	soil	a				BTEX, PAHs, and Pb
UST-54-MW01	UST-54-MW01-DS-CJ0066-REG	soil	a				BTEX, PAHs, and Pb
UST-54-GP01	UST-54-GP01-DS-CJ0067-REG	soil	a				BTEX, PAHs, and Pb
UST-54-GP02	UST-54-GP02-DS-CJ0068-REG	soil	a				BTEX, PAHs, and Pb
UST-55-MW01	UST-55-MW01-DS-CJ0069-REG	soil	a				BTEX, PAHs, and Pb
UST-55-GP01	UST-55-GP01-DS-CJ0070-REG	soil	a				BTEX, PAHs, and Pb
UST-55-GP02	UST-55-GP02-DS-CJ0071-REG	soil	a				BTEX, PAHs, and Pb
UST-56-MW01	UST-56-MW01-DS-CJ0072-REG	soil	a				BTEX, PAHs, and Pb
UST-56-GP01	UST-56-GP01-DS-CJ0073-REG	soil	a				BTEX, PAHs, and Pb
UST-56-GP02	UST-56-GP02-DS-CJ0074-REG	soil	a				BTEX, PAHs, and Pb
UST-57-MW01	UST-57-MW01-DS-CJ0075-REG	soil	a				BTEX, PAHs, and Pb
UST-57-GP01	UST-57-GP01-DS-CJ0076-REG	soil	a				BTEX, PAHs, and Pb
UST-57-GP02	UST-57-GP02-DS-CJ0077-REG	soil	a				BTEX, PAHs, and Pb

Table 4-2

Subsurface Soil Sample Designations and QA/QC Sample Quantities
Underground Storage Tank Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Matrix	Sample Depth (ft)	QA/QC Samples			Analytical Suite
				Field Duplicates	Field Splits	MS/MSD	
UST-58-MW01	UST-58-MW01-DS-CJ0078-REG	soil	a				BTEX, PAHs, and Pb
UST-58-GP01	UST-58-GP01-DS-CJ0079-REG	soil	a				BTEX, PAHs, and Pb
UST-58-GP02	UST-58-GP02-DS-CJ0080-REG	soil	a				BTEX, PAHs, and Pb
UST-63-MW01	UST-63-MW01-DS-CJ0081-REG	soil	a				BTEX, PAHs, and Pb
UST-63-GP01	UST-63-GP01-DS-CJ0082-REG	soil	a				BTEX, PAHs, and Pb
UST-63-GP02	UST-63-GP02-DS-CJ0083-REG	soil	a				BTEX, PAHs, and Pb
UST-167-MW01	UST-167-MW01-DS-CJ0084-REG	soil	a				BTEX, PAHs, and Pb
UST-167-GP01	UST-167-GP01-DS-CJ0085-REG	soil	a				BTEX, PAHs, and Pb
UST-167-GP02	UST-167-GP02-DS-CJ0086-REG	soil	a				BTEX, PAHs, and Pb
UST-502-GP01	UST-502-GP01-DS-CJ0087-REG	soil	a				BTEX, PAHs, and Pb
UST-502-GP02	UST-502-GP02-DS-CJ0088-REG	soil	a				BTEX, PAHs, and Pb
UST-502-GP03	UST-502-GP03-DS-CJ0089-REG	soil	a	UST-502-GP03-DS-CJ0090-FD			BTEX, PAHs, and Pb
UST-505-GP01	UST-505-GP01-DS-CJ0091-REG	soil	a				BTEX, PAHs, and Pb
UST-505-GP02	UST-505-GP02-DS-CJ0092-REG	soil	a				BTEX, PAHs, and Pb
UST-505-GP03	UST-505-GP03-DS-CJ0093-REG	soil	a				BTEX, PAHs, and Pb
UST-506-MW01	UST-506-MW01-DS-CJ0094-REG	soil	a				BTEX, PAHs, and Pb
UST-506-GP01	UST-506-GP01-DS-CJ0095-REG	soil	a				BTEX, PAHs, and Pb
UST-506-GP02	UST-506-GP02-DS-CJ0096-REG	soil	a	UST-506-GP02-DS-CJ0097-FD	UST-506-GP02-DS-CJ0098-FS	UST-506-GP02-DS-CJ0096-MS/MSD	BTEX, PAHs, and Pb

[a] Subsurface soil samples will be collected at the approximate bottom of the UST. Should the bottom of the UST be unknown, then the actual sample depth selected for analysis will be at the discretion of the site geologist and will be based on field observation.

QA/QC - Quality assurance/quality control.
BTEX - Benzene, toluene, ethyl benzene, and xylene.
PAH - Polynuclear aromatic hydrocarbon.
REG - Field sample.
FD - Field duplicate.
FS - Field split.
Pb - Lead.
MS/MSD - Matrix spike/matrix spike duplicate.
UST - Underground storage tank.

detailed lithologic log will be recorded by the on-site geologist for each borehole. Subsurface soil samples will be selected for analyses from any depth interval if the on-site geologist suspects potential contaminants at the interval. Site conditions such as lithology may also determine the actual sample depth interval submitted for analyses. More than one subsurface soil sample will be collected if field measurements and observations indicate a possible layer of contaminants and/or additional sample data would provide insight to the existence of any contaminants.

4.2.2 Permanent Residuum Monitoring Wells

Forty permanent residuum monitoring wells will be drilled and installed using hollow-stem augers at the twenty-nine UST sites. Permanent residuum monitoring wells will not be installed at the Telephone Exchange Building 251, Parcel 3(7) and the Base Service Station Building 2109, Parcels 21(7) and 22(7) because there are existing monitoring wells that will be sampled at these locations. The monitoring well locations are shown on Figures 4-1 through Figure 4-29. The rationale for the monitoring well locations are presented in Table 4-1. The monitoring wells will be installed a minimum of 5 feet into the water table. Based on previous drilling activities at FTMC, monitoring well depths range from 15 feet to 35 feet below land surface. The monitoring well casing will consist of new 2-inch inside-diameter, Schedule 40, threaded, flush-joint, polyvinyl chloride (PVC) pipe. Attached to the bottom of the well casing will be a section of new threaded, flush-joint, 0.010-inch factory slotted PVC well screen, approximately 10 to 20 feet long.

Soil samples for lithology will be collected continuously for every 5 feet to the total depth of the hole during hollow-stem auger drilling to provide a detailed lithologic log. The samples will be collected for lithology using a 24-inch-long, 2-inch-or-larger-diameter, split-spoon sampler. All soil borings will be logged in accordance with American Standard for Testing and Materials Method D 2488 using the Unified Soil Classification System. All soil samples will be screened in the field using a PID. The permanent residuum monitoring wells will be drilled and installed as specified in Section 4.8 and Appendix C of the SAP. The exact monitoring well locations will be determined in the field by the on-site geologist, based on actual field conditions.

4.2.3 Groundwater Sampling

Fifty-six groundwater samples will be collected at the twenty-nine UST sites. Forty groundwater samples will be collected from the monitoring wells presented in Section 4.2.2. Sixteen groundwater samples will be collected from existing monitoring wells; four existing monitoring wells at the Telephone Exchange Building 251, Parcel 3(7) and twelve existing monitoring wells at Building 2109, Parcels 21(7) and 22(7).

4.2.3.1 Sample Locations and Rationale

Groundwater samples will be collected from the existing monitoring wells and permanent residuum monitoring wells to be installed shown on Figures 4-1 through 4-29. The groundwater sampling rationale is listed in Table 4-1. The groundwater sample designation, depths, and required QA/QC sample quantities are listed in Table 4-3.

4.2.3.2 Sample Collection

Prior to sampling monitoring wells, static water levels will be measured from each of the forty monitoring wells installed at the site to define the groundwater flow in the residuum aquifer. Water level measurements will be performed as outlined in Section 4.18 of the SAP (IT, 1998a). Groundwater samples will be collected in accordance with the procedures outlined in Section 4.9.1.4 of the SAP.

4.3 Decontamination Requirements

Decontamination will be performed on sampling and nonsampling equipment to prevent cross-contamination between sampling locations. Decontamination of sampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.1 of the SAP (IT, 1998a). Decontamination of nonsampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.2 of the SAP.

4.4 Surveying of Sample Locations

Sampling locations will be marked with pin flags, stakes, and/or flagging, and will be surveyed using either global positioning system (GPS) or conventional civil survey techniques, as necessary to obtain the required level of accuracy. Horizontal coordinates will be referenced to the Alabama State Plane Coordinate System, 1983 North American Datum (NAD83). Elevations will be referenced to the National Geodetic Vertical Datum of 1929 or the North American Vertical Datum of 1988 (soon to be established on site).

Horizontal coordinates for the soil sample locations will be recorded using a GPS to provide accuracy within 1 meter. Because of the need to use permanent monitoring wells at the UST sites, a higher level of accuracy is required. The permanent residuum monitoring well locations will be surveyed to an accuracy of 0.1 foot for horizontal coordinates and 0.01 foot for elevations, using survey-grade GPS techniques and/or conventional civil survey techniques, as required. Procedures to be used for GPS surveying are described in Section 4.3 of the SAP (IT, 1998a). Conventional land survey requirements are presented in Section 4.19 of the SAP.

Table 4-3

Groundwater Sample Designations and QA/QC Sample Quantities
Underground Storage Tank Closure Assessments
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Matrix	Sample Depth (ft)	QA/QC Samples			Analytical Suite
				Field Duplicates	Field Splits	MS/MSD	
UST-3-MW01	UST-3-MW01-GW-CJ3001-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-3-MW02	UST-3-MW02-GW-CJ3002-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-3-MW03	UST-3-MW03-GW-CJ3003-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-3-MW04	UST-3-MW04-GW-CJ3004-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-9-MW01	UST-9-MW01-GW-CJ3005-REG	Groundwater	a	UST-9-MW01-GW-CJ3006-FD		UST-9-MW01-GW-CJ3005-MS/MSD	BTEX, PAHs, and Pb
UST-21-MW01	UST-21-MW01-GW-CJ3007-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW02	UST-21-MW02-GW-CJ3008-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW03	UST-21-MW03-GW-CJ3009-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW04	UST-21-MW04-GW-CJ3010-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW05	UST-21-MW05-GW-CJ3011-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW06	UST-21-MW06-GW-CJ3012-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW07	UST-21-MW07-GW-CJ3013-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW08	UST-21-MW08-GW-CJ3014-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW09	UST-21-MW09-GW-CJ3015-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW10	UST-21-MW10-GW-CJ3016-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-21-MW11	UST-21-MW11-GW-CJ3017-REG	Groundwater	a	UST-21-MW11-GW-CJ3018-FD	UST-21-MW11-GW-CJ3019-FD	UST-21-MW11-GW-CJ3017-MS/MSD	BTEX, PAHs, and Pb
UST-22-MW01	UST-22-MW01-GW-CJ3020-REG	Groundwater	a	UST-21-MW12-GW-CJ3021-FD			BTEX, PAHs, and Pb
UST-31-MW01	UST-31-MW01-GW-CJ3022-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-33-MW01	UST-33-MW01-GW-CJ3023-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-33-MW02	UST-33-MW02-GW-CJ3024-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-33-MW03	UST-33-MW03-GW-CJ3025-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-34-MW01	UST-34-MW01-GW-CJ3026-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-35-MW01	UST-35-MW01-GW-CJ3027-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-36-MW01	UST-36-MW01-GW-CJ3028-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-37-MW01	UST-37-MW01-GW-CJ3029-REG	Groundwater	a	UST-37-MW01-GW-CJ3030-FD	UST-37-MW01-GW-CJ3031-FS		BTEX, PAHs, and Pb
UST-38-MW01	UST-38-MW01-GW-CJ3032-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-39-MW01	UST-39-MW01-GW-CJ3033-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-39-MW02	UST-39-MW02-GW-CJ3034-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-39-MW03	UST-39-MW03-GW-CJ3035-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-40-MW01	UST-40-MW01-GW-CJ3036-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-43-MW01	UST-43-MW01-GW-CJ3037-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-43-MW02	UST-43-MW02-GW-CJ3038-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-43-MW03	UST-43-MW03-GW-CJ3039-REG	Groundwater	a	UST-43-MW03-GW-CJ3040-FD	UST-43-MW03-GW-CJ3041-FS		BTEX, PAHs, and Pb
UST-44-MW01	UST-44-MW01-GW-CJ3042-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-44-MW02	UST-44-MW02-GW-CJ3043-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-44-MW03	UST-44-MW03-GW-CJ3044-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-45-MW01	UST-45-MW01-GW-CJ3045-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-45-MW02	UST-45-MW02-GW-CJ3046-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-45-MW03	UST-45-MW03-GW-CJ3047-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-48-MW01	UST-48-MW01-GW-CJ3048-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-49-MW01	UST-49-MW01-GW-CJ3049-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-50-MW01	UST-50-MW01-GW-CJ3050-REG	Groundwater	a	UST-50-MW01-GW-CJ3051-FD		UST-50-MW01-GW-CJ3050-MS/MSD	BTEX, PAHs, and Pb
UST-51-MW01	UST-51-MW01-GW-CJ3052-REG	Groundwater	a				BTEX, PAHs, and Pb

Table 4-3

Groundwater Sample Designations and QA/QC Sample Quantities
Underground Storage Tank Closure Assessments
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Matrix	Sample Depth (ft)	QA/QC Samples			Analytical Suite
				Field Duplicates	Field Splits	MS/MSD	
UST-54-MW01	UST-54-MW01-GW-CJ3053-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-55-MW01	UST-55-MW01-GW-CJ3054-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-56-MW01	UST-56-MW01-GW-CJ3055-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-57-MW01	UST-57-MW01-GW-CJ3056-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-58-MW01	UST-58-MW01-GW-CJ3057-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-63-MW01	UST-63-MW01-GW-CJ3058-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-167-MW01	UST-167-MW01-GW-CJ3059-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-502-MW01	UST-502-MW01-GW-CJ3060-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-502-MW02	UST-502-MW02-GW-CJ3061-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-502-MW03	UST-502-MW03-GW-CJ3062-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-505-MW01	UST-505-MW01-GW-CJ3063-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-505-MW02	UST-505-MW02-GW-CJ3064-REG	Groundwater	a				BTEX, PAHs, and Pb
UST-506-MW01	UST-506-MW01-GW-CJ3065-REG	Groundwater	a				BTEX, PAHs, and Pb

[a] Sample depth will depend on where sufficient first water is encountered to collect a water sample.

QA/QC - Quality assurance/quality control.
BTEX - Benzene, toluene, ethyl benzene, and total xylenes.
PAH - Polynuclear aromatic hydrocarbons.
Pb - Lead.
REG - Field sample.
FD - Field duplicate.
FS - Field split.
MS/MSD - Matrix spike/matrix spike duplicate.

Table 4-4

Analytical Samples
Underground Storage Tank (UST) Closure Assessment Sites
Fort McClellan, Calhoun County, Alabama

Parameters	Analysis Method	Sample Matrix	TAT Needed	Field Samples: No. of Sample Points	Field Samples: No. of Events	Field Samples: No. of Field Samples	QA/QC Samples[a]: Field Dups (10%)	QA/QC Samples[a]: Splits w/ QA Lab (5%)	QA/QC Samples[a]: MS/MSD (5%)	QA/QC Samples[a]: Trip Blank (1/ship)	QA/QC Samples[a]: Eq. Rinse (1/wk/matrix)	Quanterra: Total No. Analysis	QA Lab: Total No. Analysis
UST Closure Assessments: 56 water matrix samples (56 groundwater samples); **86 soil matrix samples** (84 subsurface soil samples)													
BTEX	8021B	water	normal	56	1	56	2	1	1	6	1	67	1
PAHs	8310	water	normal	56	1	56	6	3	3		3	71	3
Lead	6010B	water	normal	56	1	56	2	1	1		1	61	1
BTEX	8021B	soil	normal	86	1	86	2	1	1		1	91	1
PAHs	8310	soil	normal	86	1	86	8	4	4		4	106	4
Lead	6010B	soil	normal	86	1	86	2	1	1		1	91	1
UST Closure Assessments Subtotal:				426			22	11	11	6	11	487	11

[a]Field duplicate QA split, and MS/MSD samples were calculated as a percentage of the field samples collected per site and were rounded to the nearest whole number.
Trip blank samples will be collected in association with water matrix samples for VOC analysis only. Assumed four field samples per day to estimate trip blanks. Equipment blanks will be collected once per event whenever sampling equipment is field decontaminated and re-used. They will be repeated weekly for sampling events that are anticipated to last more than 1 week. Assumed 20 field samples will be collected per week to estimate number of equipment blanks.

Ship samples to:

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
Attn: John Reynolds
Tel: 423-588-6401
Fax: 423-584-4315

USACE Laboratory split samples are shipped to:

U.S. Army Corps of Engineers, Savannah District
Environmental & Materials Laboratory
Attn: Sample Receiving
200 North Cobb Parkway
Building 400, Suite 404
Marietta, Georgia 30062
Tel: 678-354-0310

QA/QC - Quality assurance/quality control.
MS/MSD - Matrix spike/matrix spike duplicate.
BTEX - Benzene, toluene, ethyl benzene, xylene.
PAH - Polynuclear aromatic hydrocarbons.

4.5 Analytical Program

Samples collected at locations specified in this chapter will be analyzed for a specific suites of chemicals and elements based on the history of site usage, as well as EPA, ADEM, FTMC, and USACE requirements. Target analyses for samples collected from the UST sites will consist of the following analytical suites:

- Diesel and heating oil UST sites — BTEX, PAHs, Pb
- Gasoline UST sites — BTEX, PAHs, Pb
- Gasoline and diesel UST sites — BTEX, PAHs, Pb

The following are the analytical methods that will be conducted for each parameter:

- BTEX (benzene, toluene, ethyl benzene, total xylenes) - Method 8021B
- Lead - Method 6010B
- PAHs - Method 8310.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Table 4-4 in this SFSP and Table 6-1 in the QAP (IT, 1998a). Data will be reported and evaluated in accordance with CESAS Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported via hard copy data packages by the laboratory using CLP-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

4.6 Sample Preservation, Packaging, and Shipping

Sample preservation, packaging, and shipping will follow the procedures specified in Section 4.13.2 of the SAP (IT, 1998a). Completed analysis request/COC records will be secured and included with each shipment of coolers to the following subcontract laboratory:

Sample Receiving
Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
Telephone: (423) 588-6401.

Split samples collected for the USACE laboratory will be shipped to the following address:

U.S. Army Engineer District, Savannah
Environmental & Materials Unit
Attn: Sample Receiving
200 North Cobb Parkway
Building 400, Suite 404
Marietta, Georgia 30062
Telephone: (678) 354-0310.

4.7 Investigation-Derived Waste Management

Management and disposal of the investigation-derived wastes (IDW) will follow procedures and requirements as described in Appendix D of the SAP (IT, 1998a). The IDW expected to be generated at the UST sites will include soil generated during monitoring well drilling and installation, decontamination fluids and disposable personal protective equipment. The IDW will be placed in roll-off storage containers and staged in the fenced area around Buildings 335 and 336 while awaiting final disposal.

4.8 Site-Specific Safety and Health

Safety and health requirements for the closure assessments are provided in the SSHP attachment for the UST sites. The SSHP attachment will be used in conjunction with the SHP.

5.0 Project Schedule

The project schedule for the UST closure assessments will be provided by the IT project manager to the Base Realignment and Closure Cleanup Team on a monthly basis.

6.0 References

Ecology and Environment, Inc. (E&E), 1991, ***Preliminary Investigation Report for Closure of Underground Storage Tanks, Fort McClellan, Anniston, Alabama***, March.

Environmental Science and Engineering Inc. (ESE), 1998, ***Final Environmental Baseline Survey, Fort McClellan, Alabama***, prepared for U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland, January.

IT Corporation (IT), 1999, ***Final Underground Storage Tank (UST) Summary Report, Fort McClellan, Calhoun County, Alabama***, April.

IT Corporation (IT), 1998a, ***Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama***, August.

IT Corporation (IT), 1998b, ***Final Installation-Wide Work Plan, Fort McClellan, Calhoun County, Alabama***, August.

Southern Environmental Management & Specialties, Inc. (SEMS), 1997, ***Closure Report, Underground Storage Tank Removals, Site Remediation, and Site Restoration, Fort McClellan, Alabama***, February.

Theta Engineering, Inc. (Theta), 1996, ***ADEM UST Closure, Site Assessment Report, Building 294***, July.

U.S. Army Corps of Engineers (USACE), 1999, ***Statement of Work for Task Order CK08, Underground Storage Tank (UST) Closure Assessments at Fort McClellan, Alabama***, April.

U.S. Army Corps of Engineers (USACE), 1994, ***Requirements for the Preparation of Sampling and Analysis Plans***, Engineer Manual EM 200-1-3, September 1.

U.S. Environmental Protection Agency (EPA), 1993, ***Data Quality Objectives Process for Superfund, Interim Final Guidance***, EPA 540-R-93-071, September.

U.S. Environmental Protection Agency (EPA), 1990, ***Installation Assessment, Army Closure Program, Fort McClellan, Anniston, Alabama***, (TS-PIC-8933A), Environmental Photographic Interpretation Center (EPIC), Environmental Monitoring Systems Laboratory.